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THE 50 MHz DX BULLETIN
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VOLUME #2 (AUGUST 1991) ISSUES #14/#15
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NORTH AMERICAN NEWS

XE2/N6XQ DX-PEDITION / GRID EXPEDITION RESULTS: The following letter was received from Jack N6XQ: "Well, Chip and I survived our visit south of the border. We were well-warned of the narrow roads infested with nasty potholes and the wandering burros challenging the right-of-way. Our cautious driving rewarded us with a pleasant trip. We thought we were home-free as the Mexican airliner bounced down the runway at Tijuana International. Little did we know the most dangerous phase of our trip was about to begin as we negotiated the border fare with a Tijuana taxi driver. The driver obviously had computer training as his throttle had a binary control. We almost had two serious accidents as our unconcious driver plowed to the U.S. border.

On June 13 we departed in my van and over the next 7 days traversed through 17 of Baja's 24 grids, camping all the way and moving to a new location every day except for the contest Sunday where we had the luxury of camping in DL37 for two nights. Finding suitable camping spots is easy in Baja as the state is sparsely populated and there are no forest rangers telling you what you can't do. Most evenings we camped right on the beach and every couple of evenings splurged at RV parks to take advantage of showers. The weather as expected got warmer the further south we travelled. The Sea of Cortez side was noticeably warmer than the Pacific. This also held true for the water temperature. Our last and most pleasant day was in DL53 where the temperature must have been around 90° and the water temperature around 80° with a refreshing breeze. Needless to say we really didn't want to leave the Hawaii-like weather and white sandy beaches.

QSO's came in around 250, with the bulk on 6 meters. Nice double-hop to the East Coast on Saturday morning of the contest and very strong Es from DL43 on the evening of the 11th to Southern California, Nevada, and Arizona were our best openings. Several stations dropped power to less than a watt and whip antennas. We had more Es in the morning to W5 and WØ. On the 12th we cruised the Cabo San Lucas area (DL42/DL52) hoping for a continuation of the Es, but no luck. We then camped that evening in DL53 and caught a few E openings into Colorado and meteors into Phoenix and W5FF. Thursday morning (the 13th) was the biggie with very strong Es into the W5, 6, 7, & Ø call areas. We had to cut this opening short as we had to pack up and drive to La Paz to catch our flight back. We understand Terry XE2/N6CW had a field day that evening. A few 2 meter tropo and meteor contacts were made from the grids up north as well as one 432 and two 1296 contacts during the contest.

One highlight of the trip was when Chip XE2/N6CA worked XE2HWB on 6 meters. This contact was a new country for Bernardo as he had never worked his own country! We later had an eyeball with Bernardo and met his family as well as XE2HWH, Antonio. Bernardo operates from La Paz (DM44) with 10 watts and 3 elements. His operating time from the home QTH is limited because of TVI. Chip and I are fabricating a beacon for Bernardo and hopefully it will be operational before the end of July. It will be QRP of several watts because of the solar power source on the 7100 foot mountain."
QSL INFO: Jack Henry N6XQ, 1245 Santa Barbara Street, San Diego, California 92107

XE2/N6CW DX-PEDITION / GRID EXPEDITION RESULTS: The following letter was received from Terry N6CW: "Here is the breakdown on my XE2/N6CW operation from June 6-16. I operated from 13 different grids in Baja, most of them twice, and travelled 1546 miles. While mobile I ran a keyer continuously on 50.125 MHz. I made contacts in 8 of the 13 grids with the following results:

DM12: No QSO's, DM20: No QSO's, DL27: No QSO's, DL28: No QSO's, DL29: 1 QSO, DL36: 22 QSO's, DL37: 2 QSO's, DL38: 33 QSO's, DL39: 51 QSO's, DL45: 255 QSO's, DL46: 66 QSO's, DM10: 1 QSO.

Overall results were pretty good; not as good as I had hoped, but better than I expected. I had the rig on continuously and a keyer running as much as I could without running the battery down, with 100 watts and a 3 element beam. I gave it my best shot. If I am still here on the West Coast next year I will do it again."
QSL INFO: Terry Baxter N6CW, 4639 Katherine Place, La Mesa, California 92041

W5OZI BIG BEND GRID EXPEDITION RESULTS: Pat Rose W5OZI sends along the following letter: "W5OZI with son John, KB5IUA John, and N5ECP Jeff operated June 28-30 from DL88 at the very southern tip of the Big Bend National Park in Texas. We set up at old ruins called Pettits on a high bluff over-looking Mexico, about 100 yards from the Rio Grande River. Six meter equipment was an IC551D and a 4 element yagi. Power was provided by batteries and a portable gasoline generator. Despite extreme heat (110°F), high winds and some problems getting into the site, the expedition proved highly successful with 390 QSO's with all U.S. call areas plus VE2 and VE3. The entire trip (DL79-88-89, DM70-80-90) netted a total of 447 QSO's.

As promised, we stayed on 50.125 and we congratulate everyone for their splendid cooperation in keeping the frequency clear for us and for really outstanding operating techniques. Fortunately, band conditions were excellent, providing hours-on-end of very short (400 mile) to normal range Es, plus quite a lot of double hop Es. Thanks to Bill W3XO particularly, for driving 50 miles over to the W5OZI home station on Friday, June 28, and getting DL88 in my log, too!

I am considering future grid expeditions to these areas plus possibly into Mexico. If readers will let me know what grids they need south and west (within reasonable distances) of my home QTH in western EM00, I will keep a record of them and plan future trips accordingly. Thanks again, guys!"
QSL INFO: Pat Rose W5OZI, P.O. Box 393, Junction, Texas 76849

WA4VCC/VP9 (BERMUDA FM72) DX-PEDITION RESULTS: Ted Goldthorpe WA4VCC reports that the Carolina DX Association had a very successful operation from Bermuda. Their operating location on Bermuda was probably the best that the island has to offer - the Munro Beach Cottages which are located atop a high cliff overlooking the Atlantic Ocean. These cottages are situated in the town of Southampton and have been the center of many past DXpeditions, especially since their height offers a clear shot to the U.S. mainland. Ted says that the the overall 6M activity from VP9 netted 624 QSO's in 153 grids. During the June Contest 364 QSO's were made into 122 grids. A check of their contest log revealed several multi-hop contacts. Some of these were W5SFW DM95, W5AL DM95, W5MJD DM95, WA7PXD DM29, WAØJYJ DM68, K7VNU DM58, KØCL DM69, KE7NS DN41, WØIA DN70, KE7OI DN41, NØKV DM79, KVØR DN96, and WA7KYM DN71. Although rainy weather spoiled the first several days of the operation, all was not lost as 6M would open periodicly during the day and the other members of the group were quite busy handing out rare satellite QSO's from VP9 and WARC Band QSO's as well. It will be interesting to see where the Carolina DX Association decides to venture for their 1992 DXpedition! QSL's should be sent to the operator's home callsign. Since Ted WA4VCC made most of the 6M contacts and with his callsign being used during the June Contest, I will list only his address below.
QSL INFO: Ted Goldthorpe WA4VCC, 209 Swamp Fox Drive, Fort Mill, South Carolina 29715

MID-ATLANTIC STATES VHF CONFERENCE 1991 WILL BE HELD AT NEW LOCATION: The Mid-Atlantic States VHF Conference which is sponsored each year by the Mount Airy VHF Radio Club (Pack Rats) will be held at a new location this year. The new site will be the Woodland Fire Department, Route 38, about a half a mile from the Garden State Race Track. Saturday, October 5th is the date and another great line-up of technical speakers is planned. The program will begin at 9:00 AM and include moderated forums, luncheon, hospitality/cocktails, prizes, and a fine banquet. Those planning to attend from out of the area can find plentiful lodging in the immediate area. Holiday Inn, Hyatt, Cherry Hill Inn, and several budget motels are located within 1/2 mile of the Track and Fire Department. Contact Conference Chairman John Sortor KB3XG at 215-340-0847 (H) or 215-354-1635 (W) for more information. This new location will provide conference attendees with improved comfort and convenience. The Pack Rats are looking forward to hosting VHF Conference 1991!
NOTE: For those who are not familiar with the "Delaware Valley" as it is called (this is the area which comprises Northern Delaware, Southeastern Pennsylvania and Southern New Jersey), this new location for the VHF Conference is centrally located for the majority of hams in the area and is easily accessible from routes I-95, I-676, etc. Located in the Cherry Hill, New Jersey area, the site of the 1991 Conference is just minutes from Center City Philadelphia. The Pack Rats should be commended for making this bold move, especially after several years of holding the Conference at the motor lodge which was up the road from the hamfest site. Traditions are often hard to break, however, this move came out of necessity (see below). Nonetheless, I wish the Pack Rats much success with this new centrally located site.....KA3B.

GREAT NEWS!! HAMARAMA 1991 IS A GO!!: The **NEW** and **EXCITING LOCATION** with **UNLIMITED PARKING** is the **GARDEN STATE RACE TRACK** (aka Garden State Park) located at Route 70 and Cornell Avenue, Cherry Hill, New Jersey. There are approximately 4,000 parking spaces with seperate buyers and sellers areas. The date is October 6, 1991 from 6:00 AM until 4:00 PM.

NORTH AMERICAN BEACON UPDATES: Surprisingly, I have three (3) beacon updates this issue, all of which are for beacons operating on 50.075 MHz. Please note that NL7XM/B is a change from KB4AXD/2, N4WM/B was formerly the W4HHK/B, and the WA4IOB/B is totally new:

50.075 **NL7XM/2** (FN20) Staten Island, New York — 24 hour operation (CW)
TRANSMITTER: Yaesu FT680R w/AEA MM2 keyer at 1 watt & 10 watts
ANTENNA: Radialed vertical @ 15m AGL
MESSAGE: **"NL7XM/B FN20"**
REPORTS TO: Pete Varounis NL7XM/2, 91 Bryant Avenue 2, Staten Island, N.Y. 10306-2447
NOTE: The NL7XM/2 beacon operates 1 watt between 0800-2300 local time and 10 watts from 2300-0800 for 24 hour continuous operation, except when Pete is operating on the band.

50.075 **N4MW** (EM55) Memphis, Tennessee — 24 hour operation (CW)
TRANSMITTER: GE strip @ 250mW to a Mirage A1015 loafing @ 3 watts
ANTENNA: Dipole oriented east/west @ 60m
MESSAGE: **"DE N4MW/B EM55 (long dash) AR (long space)"**
REPORTS TO: Dave Meier N4MW, 3205 Covington Pike, Memphis, Tennessee 38128

50.075 **WA4IOB** (EM73) Snellville, Georgia — 24 hour operation (CW)
TRANSMITTER: Homebrew @ 1 watt
ANTENNA: 1/4 wave ground plane @ 30 feet
MESSAGE: **"BBB WA4IOB/EM73"**
REPORTS TO: Gary Bailey WA4IOB, 4245 King Richard Ct., Snellville, Georgia 30278

"EXPEDITION GREENLAND 91" CANCELLED: Word has been received that the French DXpedition scheduled for July and August to Greenland has been cancelled due to financial problems.

6Y5NW JAMAICA NOW QRV: It is reported that Nyron 6Y5NW is occasionally active on 6M with 10 watts into a 3 element beam. His address is listed in the 1991 Callbook as: Nyron Wright, Lot 162 Catherine Mount, Montego Bay, Saint James, Jamaica.

EL SALVADOR (YS): A YS1 station was reportedly worked in South America this past season. He was said to be an American, using an APO Box address. Does anyone have any additional information?

VP2EBN ANGUILLA: The DX Bulletin which is published by Chod Harris VP2ML reports that John Rouse KA3DBN will operate as VP2EBN between August 6-12, 1991 on 80-6M (SSB/CW/RTTY), including the new bands. QSL home call.

E U R O P E A N N E W S

SUMMER DX-PEDITIONS PLANNED BY GØJHC: Neil Carr GØJHC will be QRV from the following locations on 6M during his summer vacation:

JUL 30 - AUG 1	**IK2/GØJHC**	JN45	Italy
AUG 3 - AUG 7	**9H3 ? ?**	JN76	Gozo Is. (Callsign to be issued upon arrival)
AUG 9 - AUG 14	**IKØ/GØJHC**	JN61	Sardinia
AUG 17 - AUG 18	**FC1OIH**	JN08	France

Al IØAMU has indicated to Neil that there might be a chance to activate 1AØKM during his stay in Rome. This will depend on 6M band conditions at the time and Al's work commitments. It will most certainly be a last minute decision with very little or no advance publicity. Neil also says that it is possible in France for a visiting amateur to operate "legally" on 6M while using the station and callsign of a permit holder under his direct supervision.
QSL INFO: Neil Carr GØJHC, 43 Moorhey Drive, Penwortham, Preston, PR1 OSS, Lancs, England

SM7 SIX METRE GROUP MS CONTEST 1991: The SM7 Six Metre Group invites all those active on 6M to participate in their 1991 MS-Contest 1991. The MS Contest will take place between 2200 UTC on 11 August 1991 to 0400 UTC on 12 August 1991. Frequencies will be from 50.150 to 50.300 MHz. Members of the SM7 Group will favor the following frequencies:

SM7AED 50.170 SM7CMV 50.180 SM7FJE 50.190 SM7JUQ 50.210 SM7FMX 50.220
SM7LXV 50.230 SM7SCJ 50.240 (Plus 50.125, 50.157, and 50.162)

Modes used will be 2xCW or 2XSSB. The contest exchange will be callsigns plus reports (IARU MS report system). **No grid locators need be exchanged.** Only two-way MS QSO's count and QRB must exceed an estimated 500kms range. Scoring is one point per QSO multiplied by the different prefixes (ie: GW1, IK2, GM4, etc). Each of the SM7 stations will count as additional multipliers. Log entries must be postmarked no later than August 31, 1991. Entries should be addressed to: Mr. Bo Nilsson SM7FJE, V. Grevie 22, S-23594 Vellinge, Sweden. The entry logs must contain callsign, name, address, locator, date, time, stations worked, reports, points, total score, and declaration of adherence to regulations. The results of the MS Contest will be published in amateur publications in each of the countries that provides participants. The top 3 entries as well as the leading operator in each country will receive an award. The decisions of the SM7 Six Metre Group will be final.

SM7 QSL INFORMATION:
SK7NM: QSL via SM7FJE (See address above. Do not send cards for SK7NM via the bureau.)
SK7NM/1: QSL via SM7FJE

Bo SM7FJE (JO65) says that stations outside Europe are welcome to telephone him 24 hours a day if there is an opening to Scandinavia. His telephone number is: 46-40443446.

GM3POI ORKNEY ISLANDS: Clive Penna G3POI who has been active from the Orkney Islands on a few occasions over the past couple of years has succumbed to the beautiful surroundings up there and has taken up residency permanently in IO88. (Tnx G4UPS)
QSL INFO: Mr. Clive Penna GM3POI, Northwindbreck, Deerness, Orkney Islands, KW17 2QL

OZ3SDL DENMARK: Dave Court G3SDL has moved to Denmark to live for a few years and will be QRV with the callsign OZ3SDL. (Tnx G4UPS)
QSL INFO: Dave Court OZ3SDL, Ege Bakken 18, DK-3520 Farum, Denmark

GM4DGT SCOTLAND: Bill Sterling GM4DGT has moved in the past few weeks to the following address: Bill Sterling GM4DGT, 58 Tippet Knowes Park, Winchburgh, West Lothian EH52 6UP, Scotland (Tnx G4UPS)

ZB2IB GIBRALTAR: Wilfred Guerrero ZB2IB has recently moved from the address "4 Cornwall's Lane" that is shown in the Callbook. He requests that QSL's be sent to him at: P.O. Box 211, Gibraltar. (Tnx G4UPS)

OE4WHG AUSTRIA: Peter Wippel, well-known on the 6M band under his callsign OE6WHG, has moved recently just across the OE4 border line, and he has recently been active from his new QTH as **OE4WHG.** Peter is still in JN87....his old locator was JN87AB and his new locator is JN87BB. (Tnx G4UPS)

I4YAJ ITALY: Those that were fortunate enough to work the special event station I4YAJ in JN54 on June 2, 1991 might appreciate knowing that the QSL route is via IK4BWC. (Tnx G4UPS)

HV3SJ VATICAN CITY: On June 8, 1991, Ugo IØCUT and several others installed a 5 element 6M yagi at the site of HV3SJ and opened the station for several hours. Unfortunately, band conditions were not that good and only a few stations in the Rome area were worked. Then, on Sunday, June 16th, HV3SJ (operated by Ugo IØCUT) had a major opening within the European Continent. In a telephone conversation with Ted G4UPS, Ugo reported that his first QSO was around 0828 UTC and the last one just after 1200 UTC. In all he worked over 260 stations during that period. He stated that he could have worked many more people if it had not been for the pile-ups and QRM. The QSL route for HV3SJ is via IØDUD.

4J1FS MALYJ VYSOTSKIJ DX-PEDITION RESULTS: The May 24-28 4J1FS DXpedition netted 111 QSO's on 6M in 11 different countries. The QSO breakdown for this operation is as follows:

DL (7) F (1) G (39) GJ (1) LA (1) OH (22) ON (2) OY (2) OZ (9) PA (20)
SM (7) QSL's go to: Jari Jussila OH2BU, Pilvijarvi, SF-02400 Kirkkonummi, Finland

EUROPEAN NEWS

GERMAN 6M ACTIVITY: Ted Collins G4UPS sends along the following list of German stations that he has worked on 6M to date:

JN38
DK5GC

JN48
DF4UW
DF4IE
DJ6EA
DK2SK
DK4FK
DL1GRJ
DL8SCL

JN49
DF4ZK
DF5BN
DJ1UO
DJ2RE
DJ3CY
DJ3OS
DJ9UN
DK5UG
DK5WL
DL1UR
DL5IO
DL6NCK
DL6WU
DL9GU
DL9UN
DLØTD
DLØWH

JN58
DJ1OJ
DF1NP
DK1WV
DK5SO
DL1MEN
DL7AV

JN59
DJ2LF
DJ3NY
DJ3TF
DJ5OT
DJ6RN
DJ8RZ
DK2EG
DL4RDR
DL7QY
DL9NDD
DL9RDG
DLØNM

JN67
DJØGA
DK7MI

JN68
DF7RG
DJ1ZU
DJ5RDI
DJ5MS
DK2BL
DL3MBG
DL3RBH
DL5RDS

JN69
DL4RU
DL5RL
DL9RM

JO30
DJ5BV
DLØKAV

JO31
DF2BR
DK6JL
DL1EEC
DL2DBS
DL2EAD
DL3BBA
DL4KQ
DL8EBW
DL9EBA

JO32
DF8XR

JO33
DK2ZF

JO40
DL8FBD

JO41
DF7VX
DK1PZ
DK2JA

JO42
DJ9KG
DL5BBL

JO43
DJ9YE
DK2PR
DL2HCP
DL2NO
DL5BAC
DL6BCT
DL6HCE
DL8LAQ

JO44
DF5LQ
DL2LAR

JO50
DK2EA
DL8NCG

JO51
DK6AQ
DK7ZE
DL2AAL
DL9AAK

JO52
DK8KW
DL1OAD
DL4OL

JO53
DF3XZ
DK2NH
DL7AA
DL8HCZ

JO62
DKØTU
DL7ACG
DL7AJA
DL7YS
DL7ZL

YUGOSLAVIAN "CLASS A" AMATEURS GIVEN 6M PRIVELEGES: Presented below is a letter which was sent to Neil Carr GØJHC by Stane YU3ES regarding 6M priveleges for Class A amateurs in Yugoslavia:

"I suppose that you (and the UK Six Metre Group) have already received the information that the 6 meter band is now permitted in YU. The information was sent to European countries via packet radio by YU3ZM. Following that information, the details are:

--allocated to amateurs on a secondary basis. (In case of any interference, the amateur station must stop transmitting at once)

--operations on 50 MHz permitted as of June 14, 1991

--frequencies allowed: 50.000 to 51.900 MHz

--power limits: 10 dBw ERP in urban areas / 20 dBw ERP in the country side

--mobile operation is not permitted in urban areas

--only Class A amateurs can use the 6M band (Class A is the most advanced, like Extra Class)

I am operating on 6M myself but until now I have made very few QSO's. I was not at home during the good openings (eg: June 16). My first UK QSO was on June 18th with G4IJE via meteor scatter. It was Paul's DXCC country #100 on 6M. For your information, YU3ZM is the VHF Manager of SRJ (Amateur Radio Association of YU)."

YUGOSLAVIAN 6M ACTIVITY: Ted Collins G4UPS sends along the following list of Yugoslavian stations which have been heard or worked on 6M to date. I am sure that this list will grow rapidly over the next few months.

JN65
YU3AN
YU3ES

JN75
YT2AQ
YU2EY
YU3EU

JN76
YU3EA
YU3GO
YU3OV
YU3UF

JN86
YU3ZM

JN95
YU2SB

REPORT FROM PA3EUI: Peter van der Woude PA3EUI sends along the following report:
"Life has become real busy now. I have started a new job after having been unemployed for nearly 5 years. I am training to become a project engineer in about a year from now and having to spend most of the day at work the hobby had to come in second place (for a change, hi). I am now up to 392 grids worked with the following new 6M DXCC countries logged during May and June: #83 CN8ST, #84 4J1FS, #85 9J2HN, #86 A22BW, #87 YU3EU."

MISC. EUROPEAN QSL INFORMATION:

EA4CGN: Jose P. Martin, P.O. Box 57.014, 28080 Madrid, Spain
EJ4VNX: Via Bureau cards go to GMØHSC
Direct---Hugh Cumming EI9GR, 55 Barrmill Road, Mansewood, Glasgow, Scotland
YU2EY: Zeljko Ulip, P.O. Box 564, 41 001, Zagreb, Yugoslavia
YU3ES: Stan Jeric, Vena Pilona 4, 6600 Koper, Yugoslavia

E U R O P E A N N E W S

JM48
IMØUFZ
IMØ/IK2GSO

JM49
ISØAGY
ISØIBR
ISØMVE
ISØSZU
ISØVCY

JM68
IT9NDW
IT9TVF

JM77
IT9LCY
IT9NAN
IT9SGC
IW9AFI

JM78
IT9IPQ
IT9JLU

JM79
I2ADN/8
ID8/IK8MKK

JM89
I8RAR

JN34
IK1LUT

JN35
I1LNU
IK1EGC
IK1MTZ

JN40
ISØKEB
ISØXRB

JN41
IMØ/IK2GSO
ISØOMH

JN44
I1ANP
I2FHW
I2ORX
IK1EFM
IK1JGU
IK1JXY
IK1LBW
IK1LGV
IT9CJC/1

JN45
I2ADN
I2AV
I2CSB
I2CVC
I2FGT
I2JSB
I2KFW
I2OKW
I2ROM
I2WWW
I2YPY
I4CJQ
IK2CFR
IK2DMF
IK2GSO
IK2JUG
IK2JXY
IK2JYI
IK2NCJ
IK2NVP
IK2OFO

JN46
IW2BNA

JN52
I5XDL
IK5JWO
IK5NTE
IK5OIY
IK5IXI
IKØIXO

JN53
I5ARS
I5CTE
I5FLN
I5IT
I5JUX
I5MIK
I5MMC
I5MXX
I5MZY
I5TDJ
I5UNA
I5UXJ
I5WBE
I5XEI
IK5AMB
IK5CQV
IK5EHR
IK5FTQ

JN54
I4BXN
I4DWI
I4LEC
I4RHP
I4VOS
I4YNO
IK4ADE
IK4CBO
IK4FDT
IK4GRC
IK4IDP
IK4MHB
IK4NMF

JN55
I3CLZ
I3NJQ
I3VWK
IK2DDR
IK2GSV
IK2IJ
IK3MLF
IN3WWW

JN56
IN3TWX

JN61
I6DKT
IØAKP
IØAMU
IØBCJ
IØCUT
IØDAY
IØDLP
IØEIO
IØFDH
IØHCJ
IØHDJ
IØHKX
IØHU
IØJJX
IØJU
IØJX
IØKIB
IØLVA
IØNCP
IØNLK

JN61
IØOKY
IØPSK
IØSMU
IØSSW
IØWBW
IØWDW
IØWX
IØXGR
IKØBZY
IKØIOE
IKØIOF
IKØHKA
IKØHWJ
IKØJMT
IKØNNE
IKØNOJ
IKØOKY

JN62
IØFHZ
IØLBK
IØUGB

JN63
I4XCC
I6CXD
I6QNT
IØUZF
IK6DLK
IK6FHF
IK6FWJ
IKØFEC
IKØNDM

JN64
I4AYP
I4CIL
I4MKN
I4RSH
I4TDK
I4SJZ
I4UJB
I4VIH
I4VXH
IØOMD
IK3HMA
IK3JCE
IK4BHO
IK4DCO
IK4DRY
IK4HLD
IK4MEB
IK4MGE
IKØJLO/4

JN65
IK3GES
IK3PDA
IV3HWT

JN66
IN3RVI
IV3GBO
IV3HWT
IV3VFP

JN70
I8KBJ
I8TWK
I8WES
I8YGZ
IC8CQF
IC8EGJ

JN71
I2CVC/7
I7CSB
IK7BFD
IK8AUC
IK8DYD
IK8FPD
IK8IOM
IK8MKK

JN72
IK6HMG
IØAKP/6

JN80
I7UGO

JN81
IK7COM
IK7GXR

JN82
IK2DMF/7

JN90
I7IWN

JN63 SAN MARINO: T77C **JN61 SOV. MILITARY ORDER OF MALTA:** 1AØKM **JN61 VATICAN CITY:** HV3SJ

The above listing of Italian and Sicilian 6M stations was sent along by Ted Collins G4UPS. These stations are those that have been heard or worked on the band recently. Ted notes that Sardinia (ISØ/IMØ) counts as a seperate DXCC country. The RSGB also counts Sicily (IT9) as a seperate 6M DXCC country for award purposes. The ARRL does not count Sicily as a seperate DXCC country.

REPORT FROM GJ4ICD: The June 1991 report submitted by Geoff Brown GJ4ICD was very interesting indeed! On June 2nd Geoff worked 4X1IF for a new country and grid square #454 on 6M. On the 5th of June a very big aurora took place with signals at S9+++ into PA, ON, EI, G, GI, etc. Geoff states that he got on the band at around 1700 UTC and put over 100 stations in the log. However, the big day during June was the 16th. The day began by Geoff working YU3EU in JN75 for a GJ first and a new square. The remainder of the day included very intense Es with signals of 59+++ and a TE link-up into Africa. During this day of fantastic propagation, Geoff worked/heard a total of 40 DXCC countries!! The countries heard/worked included: G, GM, GI, GW, GU, GJ, EI, GD, F, ON, PA, OZ, LA, SM, OH, DL, OE, I, HV, IT9, 9H, SV, ZS9, ZS6, 9J, CU3, CT, YU, YO, CN8, ISØ, V51, 7Q7, OY, A22, SV, EA, HB9, and EA6!! Another new country (and GJ first) went into the 6M log on June 21st when 9J2HN (KH45) was worked at 1705Z. This was country #108 for Geoff.

Geoff also sends along two important notes. First, in a letter received from G4OUT, the ARRL has now confirmed that 5NØ (Nigeria) is not valid for ARRL DXCC on 50 MHz. This also holds true for the RSGB award as well. Secondly, word was apparently received from FC1MKY that no 50 MHz operation will be allowed from 3A2 Monaco.

1H1WH JO21: The following letter was received from C. Vervaet (NL-5736) concerning a special operation using the callsign 1H1WH. Unfortunately, this information was received too late for inclusion in issue #12/#13. However, the letter is reprinted below for everyone's information:

"Some radio amateurs from Region R47 (Zeeuws Vlaanderen) in Holland - members of the Dutch Society of Radio Amateurs VERON - plan a DX-pedition to the smallest "country" of Europe. This country, without a name, government, etc, is situated in JO21KK in Holland, nearby the border between The Netherlands and Belgium. This "country" has existed for 150 years. On March 22, 1841, The Netherlands and Belgium signed the Treaty of Maastricht regarding the frontier. In this treaty there was no agreement about the sovereignty of two parts of land and this "conflict" has yet to be solved. Now this "country" is to be found in a nature reserve. The radio amateurs plan to work there with the callsign 1H1WH on all the HF bands as well as 6M. The 6M frequencies will be 50.115 and 50.160 MHz (SSB) +/- QRM. The date and time of this operation will be July 19th and 20th during local daytime hours. QSL's can be sent via the bureau to NL-5736 R47, or direct with a SAE and 1 IRC to: P.O. Box 137, 4570 AC Axel, The Netherlands."

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SIX METER DXCC RECIPIENTS: Don Search W3AZD of the ARRL confirmed the following 6M DXCC recipients recently. They are #1 K5FF, #2 W5FF, #3 VE1YX, #4 JA4MBM, #5 JA1BK, #6 W2CAP/1, #7 K5CM, #8 K8WKZ, #9 K4CKS, #10 WA1OUB, #11 KA1PE, #12 K1JRW, #13 JA1VOK, #14 JA3EGE, #15 JE1BMJ, #16 JE2KCP, #17 W4CKD/8, and #18 JA2BZY.

E U R O P E A N N E W S

CU3/K6EDX AZORES DX-PEDITION RESULTS: The following preliminary report on the Azores DXpedition was received from Bob Cooper ZLØAAA/K6EDX/VP5D:

"K6EDX (ZLØAAA/VP5D/et al) travelled to the island of Terceira in the Azores chain (Europe: Zone 14) from New Zealand to operate 6/2/10 meters during the period June 6-29, 1991. Equipment included an IC575H for 10/6 meters (100 watts out), Icom 271A multi-mode with KLM brick amp (160 watts out) for 2 meters, and an AEA Morsemachine keyer. Antennas were purchased in London at a stopover just prior to the last leg of the 32 hour air trip and included a Cushcraft 3 element 10 meter beam, Tonna 5 element 6 meter and Tonna 17 element 2 meter beams. Special thanks to CU1EZ and CU2ME for advance assistance in arranging the CU license; to G3OIL and G4UPS for arranging for antennas and other equipment in advance in London, and to CU3AK on Terceira for 'adopting' the New Zealand originated travelers and making initial set-up and life in general 'easier' while in the Azores.

Statistical analysis provides one view of the overall success of the trip. The advance plan was for CU3/K6EDX to locate on the island of Sao Miguel; CU2. Fate intervened; early June produces very thick local fog on many of the Azorean islands and on June 1st Sao Miguel's Ponta Delgado airport was closed by weather. Air Portugal flew from Lisbon to alternate landing site Lajes on Terceira where the passengers were left with an option; remain there or return to Lisbon. We elected to remain provided we could obtain our sizeable and over-weight baggage. The next day Air Portugal promised to 'try again' to take us to Sao Miguel.

Two days after arriving in Terceira and still on the island, the decision was made to remain on this island for the DXpedition period. With local assistance the island was surveyed (an 80 km round trip) and an area selected where (a) overwater shots to North America and Europe were 'clean' of obstructions, (b) there was no low band/band one TV reception (parts of Terceira are served by a 100 watt TV transmitter on 55.250 MHz), and, (c) housing might be available. In the town of Biscoitos along Terceira's northwest coast a furnished home was found and negotiated. A front balcony would provide means of temporarily 'stapling' antenna masts in an upright position and the location was several hundred feet above the Atlantic with negative radiation angles from 250° through north, to 90°.

Six meter lengths of 2" OD fence pipe were acquired for masting, antennas assembled and erected. Our Bird 43 meter verified VSWR's under 1.5 to 1 on all three antennas. A compact Icom AH7000 Discone antenna first erected June 4th only hours after moving in provided monitoring access to the 25-150 MHz region as antennas were assembled and coax runs prepared. The first 45-50 MHz region DX signals were heard around 2200 UTC on June 5th; from Portugal and Spain. At 0940 UTC on June 6th the first amateur 6M signal (beacon CTØWW) and at 1557 the same date the first 50 MHz QSO: FC1LNU in JN04."

(A) SUMMARY:
50 MHz Countries worked: 28 (27 two-way 6M / 1 6M/10M crossband)
50 MHz stations worked: 429
50 MHz U.S. States worked: 14
50 MHz Grid Squares worked: 127+ (30 North America / 97 elsewhere)

(B) MINUTES OF SPORADIC E PROPAGATION:
1) Overall (in excess of 48 MHz): 8819 minutes (25.7% of time) (**)
2) To some portion of Europe: 8364 minutes (24.4% of time)
3) To some portion of N. America: 882 minutes (2.7% of time)
4) Simultaneous to Europe and North America: 440 minutes (1.3% of time)
5) Es above 88 MHz (to 108 MHz+): 1321 minutes (4.0% of time)
6) Es to 144-146 MHz: None observed

(**)Not to be confused with minutes of 50 MHz DX signals since 48/49/53/55 MHz TV and commercial services heard approximately 4-1 (minutes) reference amateur 6M signals; including 6M beacons.

(C) LONGEST DISTANCE CONTACTS:
1) East: Grid square KP20 (2658 miles)
2) North: Grid square KM27 (2791 miles)
3) West: Grid square EM25 (3627 miles)

NOTE: QTH located near base of 3,300 foot mountain range directly south, effectively blocking all but high angle propagation south.

(D) STATIONS BY COUNTRY (IN ORDER WORKED): ONLY THE FIRST STATION WORKED IN EACH COUNTRY IS LISTED BELOW

France FC1LNU (28 QSO's),	Ireland EI8EF (8 QSO's),	Jersey GJØJSY (2 QSO's),
Guernsey GU2HML (3 QSO's),	England G3OIL (82 QSO's),	Canada VE1XDX (5 QSO's),
Portugal CT4KQ (5 QSO's),	USA K1TOL (70 QSO's),	Spain EA4CGN* (1 QSO: X-BAND 6M/10M),
Malta 9H5ET (7 QSO's),	Italy IK5OIY (56 QSO's),	Gibraltar ZB2BL (3 QSO's),
Wales GW3XYW (9 QSO's),	Balearic Is. EA6/DF5JJ (1),	Greece SV1DH (6 QSO's),
Germany DK2WV (34 QSO's),	Austria OE5PAM (18 QSO's),	N. Ireland GI8AYZ (2 QSO's),
Denmark OZ1FTE (27 QSO's),	Norway LA2FGA (5 QSO's),	Finland OH2TI (6 QSO's),
Sweden SM6HYG (22 QSO's),	Scotland GM4IGS (2 QSO's),	Netherlands PAØOOS (16 QSO's),
Isle of Man GD3AHV (1 QSO),	Yugoslavia YU3OV (4 QSO's),	Belgium ON1CDQ (9 QSO's),
Luxembourg LX1JX (2 QSO's)		

(E) U.S. STATES WORKED: ME, CT, NH, OH, MD, MA, NY, PA, IN, NJ, MI, OK, RI, VA

(F) ERRATA:
A side project was to identify to the nearest 100 hertz the transmission frequency of 48 (.250 nominal) and 49 (.750 nominal) TV transmitters in Europe. These are commonly used as F/E layer propagation indicators by 50 MHz enthusiasts worldwide; but lists available indentifying transmitter frequencies against specific QTH's vary widely in data published. In the 48 MHz range there are 17 known TV transmitters in this region. Of the 17, 13 were identified on Es and their frequency verified over multiple observations to the nearest 100 hertz. In the 49 MHz range, west of 40° East there are 30 known TV transmitters. Of the 30, 19 were identified on Es and their frequency verified over typically multiple observations to the nearest 100 hertz. Using a combination of TV DX'ing and 50 MHz disciplines, hundreds of loggings were made. Of passing interest were some of the distances involved on Es: 1) 49.750.1 MHz GS KP75-Kuzema/10 Kw @ 3023 miles and 2) 49.747.5 MHz GS KO85-Moscow/300 Kw @ 3113 miles. A full listing of the observation-verified 48 and 49 MHz TV carriers will be released shortly.

CU3/K6EDX PRELIMINARY REPORT OF 48/49 MHz TV CARRIER LOGGINGS:
"One of the more perplexing aspects of sitting in New Zealand, and fantasizing about working Europe or Africa on 50 MHz, is the almost complete lack of 'hard data' for European (or North African) transmitters in the 30-48 MHz region. If one is addicted to 'watching the MUF rise' from 28 to 35 to 43 to 50 MHz, and has the generous availability of MUF 'indicators' from North America, South America and Asia, the lack of such information for reference in Europe and North Africa is at best frustrating. Accordingly, the period spent in the Azores (June 5-28) included more than 300 hours of 30-50 MHz watching, attempting to locate and source transmitters which might at some future date be useful propagation indicators to amateurs in the Pacific, Western North America and Asia. This list is that effort. Some observations:

A) Virtually all propagation above 30 MHz was via Es (or EE/EEE). F-layer signals from South America, the Southern USA and Caribbean were purged from this list as we already have reasonably complete data on these areas.
B) 48.25 and 49.75 (nominal) TV carrier frequencies are detailed in a seperate set of reference sheets.
C) No 30-48 MHz signals were identified from any of the following geographical areas:
   1) U.K. (save possible BBC harmonics near 35 MHz)
   2) DL/DK
   3) PA/PE
   4) HB9
   5) ON or LX
   6) OZ (save possible Radio Denmark link at 43.410 MHz)
   7) LA, SM, OH
   8) SP, OE, SV, HA, et al.

   *This is an intriguing point since either/or amateur 50 MHz signals/TV signals at 48.25 or 49.75 were identified from virtually all of these geographic areas. **This raises the serious question, "Is the 30-(45) (48) MHz band allocated and in use by two-way services in these countries?".** Anyone who can shed light on this question is invited to do so.
D) French services clustered between 35.00 and 36.025 are believed to be low power/short range systems. Note the use of 12.5 KHz splits.
E) The region between 36.0 and 40.0 is very lightly loaded; as compared to Asia, North America, and South America. Only 12 transmitters were heard here.
F) Portuguese simplex and repeaters grouped near 40.200 are much used and should be excellent indicators.
G) 40.680 (nominal) is an even bigger mess in Europe than in the Pacific (you have to experience this to understand the statement). These are probably 1, 5, or 10 watt transmitters loading into inefficient antennas for coverage of a single building, or at most a city block.
H) Italian two-way heard this past March-April in New Zealand between 40 and 43 MHz was virtually unlogged from the Azores. This is puzzling at best.
I) The region 41-45 MHz is also lightly used when compared with North America, et al.
J) 'FM TELCO' (indicating radio wave extensions to fixed landline telephones, OR, point-to-point TELCO links) are abundant in Portugal, Spain, Italy, Azores; NONE were identified from the U.K., France, etc; another puzzle. Many carriers without language identified were logged...but; do remote phones operate in some region outside of 45-50 MHz in these countries? Or, is it that in Azores, Portugal, Spain and Italy many firms sell 'high power' versions (possibly with outside antennas) whereas in other countries these units are closely regulated to typically 50/100 milliwatt power and short range telescopic whips?
K) NOT shown in this report; on several occasions an FM (10-15 KHz deviation) signal was heard at 50.050 MHz. It turned out to be a French chap who had converted his wireless telephone to 50.050 adding a 10 watt linear and a beam antenna. He said he was taking part in a new 'hobby'; working DX with his wireless telephone. And 50.050 is this groups' CALLING CHANNEL(!) I think he told me he has 'worked 11 countries' so far. Oh yes, they assign themselves call letters like the out-banders in the 27-28 MHz region. His was M1E. Can a new magazine for wireless telephone DX'ers be far behind?"

NOTE: The next 5 pages contain the loggings of Bob Cooper CU3/K6EDX.

PORTUGAL OPERATION PLANNED BY G3SDL: Dave Court G3SDL/OZ3SDL reports that he will be signing CT1/G3SDL mainly from IM57, but also possibly from IM56 and IM66 from July 25 to August 8, 1991. (Tnx Six News, issue #30)

GØNAR/MM OPERATION PLANNED: Adrian GØNAR is organizing a maritime mobile expedition to take place between August 23 and September 13, 1991. He will be sailing around the Azores for 5 days and then onto Portugal. (D.T.I. approval has been obtained). Various HM and IM squares will be activated and more details will be published on packet as his departure date grows nearer. Callsign will be GØNAR/MM with GØFLA & G3EHV. (Tnx Six News, issue #30)

LIECHTENSTEIN OPERATION PLANNED BY ON4ANT & ON1CDQ: ON4ANT and ON1CDQ will operate from HBØ between August 2-4, 1991. Operation will be limited to "outside" TV hours (2300-0600 UTC) on 50.140 MHz. They will receive on "evens" and transmit on "odds". (Tnx Six News, issue #30)

50 MHz SITUATION IN POLAND: Chris SP4TKK reports that the first 50 MHz licenses in Poland are expected to be issued sometime next year (1992). Due to the continued use of Band I TV there will be many no-go areas. (Tnx Six News, issue #30 via G1IOV)

NEW DXCC COUNTRY IN EUROPE IS POSSIBLE: The following item appeared in Issue #597 of the DX Bulletin which is published by Chod Harris VP2ML. It was sent to TDXB by LU2AJL:

"The **Knights of Malta** will be returning to the island of Malta, which they ruled until Napoleon Bonaparte forced them into exile in1798. The Maltese government has agreed to give the order exclusive use of a fortress, a palace, and a church. SMOM's headquarters will remain in Rome, where **1AØKM** operations originate. Depending on the terms of the agreement between Malta and SMOM, this may create a new DXCC country!"

CU3/AZORES 30-50 MHz LOGGINGS: JUNE 05-29,1991 BY ZL4AAA ON TERCEIRA ISLAND (HM68):
REF: BOB COOPER,JR. (ZL4AAA/K6EDX) P.O. Box 330, MANGONUI, FAR NORTH, NEW ZEALAND
TV CARRIERS: CORRECT AS SHOWN TO NEAREST 100 HERTZ. TIMES REFLECT EARLIEST/LATEST HEARD IN UTC

FREQ	DESCRIPTION	LANGUAGE	LOCATION	TIME 'A'	NOTE 'A'	NOTE 'B'	ERRATA 'A'	ERRATA 'B'
30.100.0	AM 2-WAY			0807-XXXX			Many carriers, QRM	
30.125.0	DATA		AFRICA?	1914-XXXX			Low Speed/On-Off	
30.210.0	AM/B/C LINK		AFRICA?	1913-XXXX			Harmonic/SW Bcster?	
30.400.0	AM 2-WAY			0749-XXXX			Many sigs/QRM	
30.660.0	AM B/C LINK		AFRICA?	1912-XXXX			Harmonic/SW Bcster?	
30.800.0	AM B/C LINK		AFRICA?	1911-XXXX			Harmonic/SW Bcster?	
31.125.0	FM 2-WAY		AFRICA?	1911-XXXX			OMs/Both Sides	
31.150.0	AM PAGER			1705-XXXX			Weak Modulation	
31.324.0	AM B/C LNK	PORTG.	PORTUGAL	1730-XXXX				
31.750.0	AM PAGERS			0847-XXXX			Tones/Nets:Svrl	Poss. France?
33.100.0	AO			1705-XXXX				
33.350.0	AM 2-WAY			1705-XXXX			QRM/Busy Channel	
33.780.0	FM 2-WAY	PORTG.	PORTUGAL	1736-XXXX				
35.000.0	FM PAGER	FRENCH	FRANCE	0710-XXXX			Twinkle tones/YL	
35.000.0	AO			0748-0835				
35.000.0	FM 2-WAY	FRENCH	FRANCE	0748-XXXX			OMs/B-S	
35.025.0	PAGER	FRENCH	FRANCE	1407-XXXX			Tones/Voice	
35.037.5	FM PAGER	FRENCH	FRANCE	0905-XXXX			Tones/voice	Recorded Messages
35.050.0	FM PAGER	FRENCH	FRANCE	0710-XXXX			Twinkle tones	
35.050.0	FM 2-WAY	FRENCH	FRANCE	0747-XXXX			OMs/repeater?	
35.075.0	FM PAGER	FRENCH	FRANCE	0710-1705			Twinkle tones/YL	
35.075.0	FM 2-WAY	FRENCH	FRANCE	0746-0900			OM/YL;Mlt.Tone Call	
35.112.5	FM 2-WAY	FRENCH	FRANCE	0846-XXXX			OMs	Note 12.5 KHz split
35.125.0	RPTR/FM	FRENCH	FRANCE	0745-XXXX				
35.150.0	RPTR/FM	FRENCH	FRANCE	1407-XXXX				
35.175.0	FM 2-WAY	FRENCH	FRANCE	0845-XXXX			Poss. Repeater	
35.200.0	2-WAY FM	SPANISH	SPAIN?	1025-XXXX			OM	
35.220.0	AM B/C LNK	SS/ITAL?	EUROPE	2040-XXXX			Echo effect audio	Quickly QSBed out
35.240.0	AM 2-WAY	ITALIAN	ITALY	0905-XXXX			Tones/OM voice	
35.250.0	AM B/C LNK	Various	?	1703-1952			AM/diff. languages	
35.260.0	RPTR/FM	FRENCH	FRANCE	1407-XXXX			Telco Patch	Freq. Not French
35.275.0	FM 2-WAY	FRENCH	FRANCE	0744-0835			B/S; mobile	
35.287.5	FM 2-WAY	FRENCH	FRANCE	0846-0905			OM/Both Sides/Tones	Note 12.5 KHz Ch.
35.300.0	RPTR/FM	FRENCH	FRANCE	0706-1407			OMs/Short Tail	Twinkle tones/paging
35.340.0	FM PAGER	FRENCH	FRANCE	1236-1407			Tones/Data Bursts	
35.490.0	AM B/C LNK	ENGLISH	ENGLAND?	1350-XXXX			BBC? Broadcast Har?	
35.550.0	AM SIGNALER		FRANCE?	1055-1942			AM/Tones/Wk. Voice	QRM
35.550.0	DATA		EUROPE	1321-XXXX			FAX-like data	
35.550.0	AM SIGNALER	ITALIAN	ITALY	1930-XXXX			Voice + Data	
35.575.0	AM SIGNALER		EUROPE	1225-1942			Tones, voice, QRM	YL
35.580.0	AM B/C LNK	ENGLISH		1020-1157			British Accent/Prog.	
35.600.0	AM SIGNALER		EUROPE	1320-1943			3T; pager?	
35.625.0	AO		EUROPE	1226-1703			Tones	
35.625.0	SIGNALER	PORTG.?	PORTUGAL?	1320-1943			AO/Data/Voice	
35.630.0	AM B/C LNK			1157-XXXX			See 35.580	Maybe Freq. Shift
35.640.0	AM B/C LNK	SLAVIC?		1445-XXXX			SW B/C Harmonic?	
35.650.0	PAGER/VOICE		EUROPE	1229-1825			Pager/YL	
35.660.0	FM 2-WAY	ENGLISH	E.CANADA?	2237-XXXX			Hotel Pager	
35.675.0	PAGER/VOICE		EUROPE	1230-XXXX			Pager/YL	
35.675.0	SIGNALER		EUROPE	1319-1702			2T,3T; pager?	Net with .500- .825?

35.700.0	SIGNALER		EUROPE	1227-1945		2T,3T;YL pager?	Net with .500- .825?
35.725.0	PAGER/VOICE		EUROPE	1228-1944		YL Voice/tones	
35.750.0	PAGER/VOICE		EUROPE	1228-1943		Voice+AO+data	AM
35.750.0	AM B/C LNK	RUSSIAN	USSR	0950-XXXX		Radio Moscow	Harmonic?
35.775.0	SIGNALER			1440-XXXX		AM	
35.800.0	SIGNALER		EUROPE	1316-1930		2T,3T,4T; pager?	Net with .500-.825?
35.800.0	FM 2-WAY	FRENCH	FRANCE	0847-1525		OMs;Tone Call	Probable Rptr
35.825.0	FM 2-WAY	FRENCH	FRANCE	0845-2210		2T,3T,Poss. Rptr	Net with .500-.825?
35.850.0	FM 2-WAY	FRENCH	FRANCE	0848-XXXX		Tone Call;OMs;Rptr?	Page as well?
35.875.0	AO			0744-XXXX		Carrier/on-off	
35.900.0	SIGNALER			1440-XXXX		AM	
35.950.0	FM 2-WAY	FRENCH	FRANCE	0846-XXXX		Tone Call;OMs;Rptr?	Pager as well?
35.985.0	FM 2-WAY	FRENCH	FRANCE	1410-XXXX		Poss. 35.987.5	
36.025.0	FM PAGER	FRENCH	FRANCE	1530-XXXX		Tones/Voice	
36.200.0	AO/RPTR?			2340-XXXX		Repeater Hung-Up?	
36.920.0	AO			0848-XXXX		QRM; possibly France	
36.940.0	FM 2-WAY	SPANISH	SPAIN	1222-XXXX			
37.540.0	FM 2-WAY	PORTG.	PORTUGAL	0900-1735		OM/Short Tail	
37.559.1	AO/dirty		EUROPE?	0758-0857			
38.000.0	F/AM 2-WAY	PORTG?	PORTUGAL?	1231-XXXX		HVY QRM/Taxis?/AM-FM	
38.260.0	RPTR/FM	PORTG.	PORTUGAL	0838-1735		Short tail	
38.400.0	FM 2-WAY		EUROPE	1235-XXXX			
39.275.0	RPTR/FM?	SPANISH	SPAIN	0850-XXXX		Duplex	
39.575.0	AM B/C LNK			2223-XXXX		2 sets pgm audio	No hetrodyne
39.900.0	RPTR/FM	PORTG.	PORTUGAL	1014-1400		Svrl second tail	YL Op
40.060.0	FM 2-WAY	PORTG.	PORTUGAL	0854-1732		QRM/SVRL	
40.080.0	MPX/AO		EUROPE	1140-1550		.078.7,.077.5 MPX	10 KHz wide? Data
40.140.0	RPTR/FM	PORTG.	PORTUGAL	0835-2353		OM+YL;hangs-up noise	Short tail
40.140.0	FM 2-WAY	PORTG.	PORTUGAL	0725-2210		QRM To Portg. Rptr	YL Op
40.140.0	SIGNALER?			0705-XXXX	ALSO HEARD IN ZL	Ticking/On-Off	
40.140.0	FM 2-WAY	SPANISH	SPAIN	1525-XXXX			
40.160.0	RPTR/FM	PORTG.	PORTUGAL	0900-2210		Short Tail; OM, YL	
40.160.0	FM 2-WAY	PORTG.	PORTUGAL	0900-XXXX			
40.161.3	AO/Hets		EUROPE	1145-1718		Poss. MPX at 1.3 Kc	
40.180.0	RPTR/FM	PORTG.	PORTUGAL	1120-1720		Short Tail/OMs	Hvy QRM Thru Rptr
40.180.0	FM 2-WAY	PORTG.	PORTUGAL	0844-2032		QRM/SVRL/OM+YL	Possible Police
40.200.0	RPTR/FM	PORTG.	PORTUGAL	0758-2238		OM=YL/Short Tail	COR Locks Noise
40.200.0	FM 2-WAY	PORTG.	PORTUGAL	0845-1732		QRM/SVRL	
40.217.0	FM 2-WAY	FRENCH	FRANCE	1120-XXXX		OM	Freq. Not standard
40.220.0	RPTR/FM	PORTG.	PORTUGAL	0759-1120		Sq. Opens Noise/QRM	
40.220.0	FM 2-WAY	PORTG.	PORTUGAL	0854-1730		QRM/SVRL/OM+YL/PATCH	
40.240.0	FM 2-WAY	PORTG.	PORTUGAL	1404-XXXX		OM	
40.240.0	FM 2-WAY	ITALIAN	ITALY	1228-XXXX			
40.260.0	FM 2-WAY	PORTG.	PORTUGAL	0840-1530		OM	
40.260.0	FM 2-WAY	SPANISH	SPAIN	2035-XXXX		OM	
40.280.0	AO			0856-XXXX			
40.340.0	FM 2-Way	PORTG.	PORTUGAL	1140-1737		OM	
40.360.0	FM 2-WAY	PORTG.	PORTUGAL	1410-XXXX		YL	
40.400.0	SIGNALER		EUROPE	1225-XXXX	ALSO HEARD IN ZL	Multiple Tones	
40.450.0	SIGNALER		EUROPE?	1435-XXXX		Warbler	
40.450.0	RPTR/FM	SPANISH	SPAIN?	1657-XXXX		Short tail/police?	
40.460.0	FM 2-WAY	SPANISH	SPAIN?	1731-XXXX			
40.500.0	SIGNALER			1007-1718		CR on-off;Int.Tone	FM 2-way QRM
40.500.0	FM 2-WAY	SPANISH	SPAIN	0856-XXXX		OMs	

40.540.0	RPTR/FM	PORTG.	PORTUGAL	0844-1450	No tail/OMs	
40.540.0	FM 2-WAY	ITALIAN	ITALY	0752-XXXX		
40.600.0	TONE			1221-XXXX	Carrier on/off	
40.600.0	RPTR/FM	PORTG.	PORTUGAL	0752-1240	Phone Patch	
40.640.0	RPTR/FM	PORTG.	PORTUGAL	1120-XXXX	OMs/Short Tail	
40.650.0	RPTR/FM		EUROPE	1300-XXXX	Short Tail/Hum	
40.679.5	AO CARRIERS			0800-2117	Pager related?	Mult.Crs/1.9Kc MPX?
40.680.0	PAGE/TONES	SPANISH	SPAIN	0750-2032	1,2 Tone Calls;Voice	
40.680.0	SIGNALER?			1041-XXXX	Tick-tones;data brst	Same as .680 page?
40.680.3	MPX/AO		EUROPE	1140-1655	.4 KHz MPX/2 Kc wide	also 1.3 Kc spacing
40.874.8	AO/PAGERS		EUROPE	0800-2035 ALSO HEARD IN ZL	Signaling Tones	SS and FF Messages
40.880.0	RPTR/FM	PORTG.?		1220-XXXX	OMs	
40.925.0	SIGNALER			1455-XXXX	Data/voice	
40.950.0	SIGNALER		EUROPE	0750-1301	Sub-low Tones;Data?	
41.000.0	FM TELCO		EUROPE	0936-1520	'Soft Language'; OM	Busy Tone/off
41.050.0	FM 2-WAY			1045-XXXX		
41.100.0	FM 2-WAY	ITALIAN	ITALY	1220-XXXX ALSO HEARD IN ZL		
41.161.5	AO/MPX			1122-XXXX	1.8/&-or 2.9 Kc	10 KHz wide?
41.175.0	FM 2-WAY	PORTG.	PORTUGAL	1045-XXXX		
41.475.0	RPTR/FM	PORTG.	PORTUGAL	1220-XXXX	Keys on noise	
41.650.0	FM 2-WAY	PORTG.	PORTUGAL	0838-XXXX		
41.799.8	AO		EUROPE	1244-XXXX ALSO HEARD IN ZL		
42.240.0	FM TELCO	PORTG.?	PORTUGAL?	1150-XXXX	Duplex	
42.650.0	FM 2-WAY	PORTG.	PORTUGAL	1140-1517	QRM/Phonetics	
42.720.0	AM 2-WAY	FRENCH	FRANCE?	1740-XXXX		
42.950.0	AO/TELCO			1020-XXXX		
42.975.0	AO/FM TELCO	SPANISH	SPAIN	0846-1744	Occ.QRM/AO + Duplex	
43.250.0	AO			1455-XXXX	QRM	
43.410.0	AM B/C LNK	DANISH	DENMARK	2229-XXXX	Radio Denmark	Link To Norway TR?
44.132.5	AO/SIGNALER		EUROPE?	0857-XXXX	Hetrodynes/ multiple	
44.350.0	FM 2-WAY	PORTG.?	AZORES?	1025-XXXX	OMs/Both Sides	
45.060.0	FM TELCO	SPANISH	SPAIN	0849-1650	Duplex/OMs/AO	
45.120.0	AO/AM TELCO			1457-XXXX		
45.150.0	FM TELCO			2117-XXXX	Latin based language	
45.177.0	AO		EUROPE	1150-XXXX		
45.180.0	FM TELCO	SPANISH	SPAIN	0730-1730	Duplex	
45.240.0	FM TELCO	SPANISH	SPAIN	0730-1735	Duplex	
45.314.0	FM TELCO	PORTG.?	PORTUGAL?	1151-XXXX	Duplex	
45.315.0	AO			0705-XXXX	Freq. Drifts	Same as .314 Telco?
45.420.0	FM TELCO			1735-XXXX	Duplex	
45.480.0	FM TELCO	SPANISH	SPAIN	0859-XXXX	Duplex; 1 side weak	
45.540.0	FM TELCO			1458-XXXX		
45.600.0	TELCO	PORTG.?	PORTUGAL?	1151-XXXX	Duplex	AM+FM over .595-.600
45.855.1	AM B/C LNK	SPANISH?		1930-XXXX POSS.HEARD IN ZL	YL/Program/Harmonic?	VOA TANGIER?
45.900.0	FM TELCO			1151-XXXX	Duplex	
45.960.0	FM TELCO	SPANISH	SPAIN	0745-1045	Ringing tones	
46.025.0	FM TELCO	PORTG.?	PORTUGAL	0844-XXXX POSS.HEARD IN ZL	Duplex	
46.080.0	AM TELCO		EUROPE	1517-XXXX		
46.080.0	FM TELCO			1459-XXXX		
46.125.0	FM TELCO	ITALIAN		2138-XXXX		
46.125.0	AM TELCO		EUROPE	1517-XXXX		
46.150.0	2-WAY FM	SPANISH	SPAIN	0900-XXXX	OM	
46.200.0	FM TELCO		EUROPE	0851-XXXX		
46.200.0	FM TELCO	PORTG.?		1930-XXXX	Duplex	

46.225.0	AO/TELCO?		EUROPE?	0900-XXXX		Open Telco Ckt?	
46.250.0	FM TELCO		EUROPE	0730-0900		AO Btwn Calls?	Open Telco Ckt?
46.253.0	AO/TELCO?		EUROPE	1517-XXXX			
46.275.0	FM TELCO		EUROPE	0900-1517		Duplex/AO Btwn Calls	
46.277.0	FM TELCO	ITALIAN?	ITALY	1500-XXXX			
46.350.0	AO/TELCO?			1031-XXXX			
46.400.0	FM TELCO	ITALIAN?	ITALY	1500-XXXX		AO + duplex FM	
46.440.0	FM TELCO		EUROPE	1022-XXXX		Ringer; SS?	
46.500.0	FM TELCO			1045-XXXX		Duplex	
46.560.0	FM TELCO	PORTG.?		1930-XXXX		Duplex	
46.650.0	FM TELCO	ITALIAN	ITALY	1500-XXXX		Duplex	
46.680.0	FM TELCO	SPANISH	SPAIN	1517-XXXX		Duplex	
46.700.0	FM TELCO	PORTG.	POR/AZOR?	0830-1025		Duplex	
46.920.0	AO		EUROPE	1522-XXXX		Carrier on/off	
46.949.0	RTTY		EUROPE?	1805-XXXX		Poss. Har. Lajes Fld	
46.950.0	FM TELCO		EUROPE	1022-XXXX		SS?	
46.960.0	AM B/C LNK	PORTG.?	PORTUGAL?	1501-1930		Fone line compressed	VOA Portugal Link?
46.975.0	FM TELCO			1503-XXXX		Duplex	
46.980.0	FM TELCO		EUROPE	1022-XXXX		SS?	
47.000.0	AM B/C LNK	PORTG.?	PORTUGAL?	1504-XXXX		Fone Line Compressed	See 46.960.0
47.100.0	FM TELCO	SPANISH	SPAIN	0948-XXXX			
47.220.0	FM TELCO			1032-XXXX		Duplex	
47.280.0	FM TELCO	SPANISH	SPAIN	1517-XXXX		Duplex	
47.400.0	FM TELCO			1518-XXXX		Ringer;SS?	
47.400.0	FM TELCO	ITALIAN	ITALY	1152-XXXX		Duplex/YLs	
47.700.0	FM TELCO			1025-XXXX		QRM	
47.730.0	FM TELCO		EUROPE	1022-XXXX		SS?	
47.940.0	AO/LINK?		EUROPE	1525-XXXX		Weak Music/OM Voice	Poss. B/C Link?
48.237.0	TV VIDEO		JO21/Belg.			0.1 Kw;04E/51N	Freq. NOT verified
48.239.4	TV VIDEO		JO79/Swed.			60 Kw; 15E/59N	Freq. +/- .1
48.239.7	TV VIDEO		JN39/Germ.			100 Kw;07E/49N	Freq.+.0/-.1
48.241.2	TV VIDEO		IN51/Port.		ALSO HEARD IN ZL	40 Kw; 08W/42N	Freq.+.2/-.1
48.246.1	TV VIDEO		JP21/Norw.			30 Kw; 05E/61N	Freq.+1.0/-.1
48.247.3	TV VIDEO		JO41/Germ.			100 Kw;08E/51N	Freq.+.2/-.1
48.249.2	TV VIDEO		KQ50/Norw.			30 Kw; 30E/70N	Freq.+.3/-.5
48.250.0	TV VIDEO		JO51/Germ.			0.1 Kw;11E/51N	Freq. NOT verified
48.250.0	TV VIDEO		Yugoslavia			May Not Exist	
48.250.0	TV VIDEO		KP04/Swed.			60 Kw; 20E/64N	Freq.+.1/-.1
48.250.1	TV VIDEO		JN36/Swit.			48 Kw; 07E/47N	Freq.+.0/-.3
48.250.2	TV VIDEO		IN80/Spain		ALSO HEARD IN ZL	250 Kw;04W/41N	Freq.+.0/-.2
48.251.9	TV VIDEO		IN52/Spain		ALSO HEARD IN ZL	40 Kw; 08W/43N	Freq.+.1/-.0
48.253.3	TV VIDEO		JO48/Norw.			60 Kw; 08E/58N	Freq.+.1/-.6
48.255.0	TV VIDEO		JP83/Swed.			0.15Kw;17E/63N	Freq. NOT verified
48.257.0	TV VIDEO		JP53/Norw.			100 Kw;10E/63N	Freq.+.0/-.9
48.260.5	TV VIDEO		JN57/Germ.			100 Kw;10E/47N	Freq.+.1/-.0
48.360.0	FM TELCO		EUROPE	1022-XXXX		Ringer; SS?	
48.500.0	RPTR/FM	SPANISH	SPAIN?	1410-XXXX		Short Tail	Inside Ch. E2???
48.520.0	FM TELCO	SPANISH	SPAIN	1022-XXXX		Duplex	
48.850.0	FM B/C LNK	ITALIAN?	ITALY?	1152-XXXX		Wideband/Bcst Pgming	
48.900.0	FM TELCO	SPANISH	SPAIN	1022-XXXX		Duplex	
49.050.0	FM TELCO	ITAL/SS?	EUROPE	1520-XXXX			
49.064.0	FM TELCO			1930-XXXX		Duplex	
49.125.0	FM TELCO	SPANISH	SPAIN	1045-XXXX		Duplex	
49.150.0	AO			1419-XXXX			

49.200.0	FM TELCO			1035-1152			Duplex/Busy Signal	
49.230.0	FM TELCO			1035-1931			Duplex; some AM also	
49.300.0	FM TELCO			1046-XXXX				
49.350.0	FM TELCO			1026-XXXX			Rotary Dial	
49.400.0	FM TELCO	SPANISH	SPAIN	0948-XXXX			Duplex	
49.494.0	FM TELCO			0730-XXXX				
49.500.0	FM TELCO		EUROPE	1520-XXXX				
49.540.0	FM TELCO	PORTG.	AZORES					
49.545.0	FM TELCO	PORTG.	AZORES					
49.545.0	FM TELCO	PORTG.	PORTUGAL	0947-XXXX			Duplex	
49.724.0	CW/FSK?			1202-XXXX			Ship Harmonic?	
49.725.0	FM TELCO	SPANISH	SPAIN	0945-XXXX			Duplex	
49.730.0	FM TELCO	ITALIAN	ITALY	1014-1702			AO not in use/link	Beeper tone
49.730.0	FM TELCO	SPANISH	SPAIN	0945-XXXX				
49.738.5	TV VIDEO		KO???				Unknown	Freq.+.0/-.0
49.739.7	TV VIDEO		JO70/Czec.				150 Kw;14E/50N	Freq.+.0/-.1
49.739.7	TV VIDEO		KO62/USSR				35 Kw; 33E/53N	Freq.+.0/-.0
49.739.9	TV VIDEO		KO68/USSR				35 Kw; 38E/59N	Freq.+.0/-.1
49.740.0	TV VIDEO		KO20/USSR				150 Kw;24E/50N	Freq. NOT verified
49.740.0	TV VIDEO		KN65/USSR				50 Kw; 34E/45N	Freq. NOT verified
49.740.0	FM TELCO	ITALIAN	ITALY	0725-1730			Duplex/Rotary Dial	Mixes with R1 Video
49.740.0	FM TELCO	PORTG.	AZORES				Duplex	
49.740.0	FM TELCO	PORTG.	PORTUGAL	0745-XXXX			Duplex	
49.740.1	TV VIDEO		JN97/Hung.				150 Kw;19E/47N	Freq.+.1/-.1
49.741.0	TV VIDEO		KP78/USSR				10 Kw; 35E/68N	Freq.+.0/-.0
49.744.2	TV VIDEO		JN86/Hung.				50 Kw; 17E/46N	Freq.+.3/-.2
49.747.5	TV VIDEO		KO85/USSR		POSS.HEARD IN ZL		300 Kw;38E/56N	Freq.+.1/-.1
49.748.8	TV VIDEO		JO83/Pola.		POSS.HEARD IN ZL		120 Kw;18E/53N	Freq.+.0/-.1
49.749.3	TV VIDEO		Unknown		POSS.HEARD IN ZL		Unknown	Freq.+.0/-.0; dirty
49.750.0	TV VIDEO		KN95/USSR				50 Kw; 39E/45N	Freq. NOT verified
49.750.0	TV VIDEO		LN04/USSR				35 Kw; 40E/44N	Freq. NOT verified
49.750.0	TV VIDEO		KP41/USSR				25 Kw; 29E/61N	Freq. NOT verified
49.750.0	TV VIDEO		LO08/USSR				10 Kw; 40E/58N	Freq. NOT verified
49.750.0	TV VIDEO		KO27/Latv.				10 Kw; 25E/57N	Freq. NOT verified
49.750.0	TV VIDEO		KO50/USSR				1 Kw; 31E/50N	Freq. NOT verified
49.750.0	TV VIDEO		KO24/Lith.				0.1 Kw;21E/54N	Freq. NOT verified
49.750.0	SIGNALER			0946-XXXX			Single Tone	
49.750.1	TV VIDEO		KO33/USSR				150 Kw;27E/54N	Freq.+.0/-.2
49.750.1	TV VIDEO		KP75/USSR				10 Kw; 34E/65N	Freq.+.0/-.0
49.750.1	TV VIDEO		JN78/Aust.				60 Kw; 15E/48N	Freq.+.1/-.0
49.750.2	TV VIDEO		KN68/USSR				35 Kw; 33E/48N	Freq.+.0/-.0
49.750.4	TV VIDEO		JN98/Czec.				0.15Kw;18E/48N	Freq.+.0/-.2
49.750.7	TV VIDEO		KO59/USSR				240 Kw;30E/60N	Freq.+.0/-.0
49.755.2	TV VIDEO		KP???		POSS.HEARD IN ZL		Unknown	Freq.+.1/-.0
49.757.9	TV VIDEO		KO56/USSR				90 Kw; 30E/56N	Freq.+.1/-.1
49.758.0	TV VIDEO		KP63/USSR				10 Kw; 32E/63N	Freq. NOT verified
49.759.9	TV VIDEO		KO41/USSR				50 Kw; 29E/51N	Freq.+.0/-.0
49.760.0	TV VIDEO		KO92/USSR				35 Kw; 39E/52N	Freq. NOT verified
49.760.0	FM TELCO	ITALIAN	ITALY	1153-1201				
49.760.0	FM TELCO	SPANISH	SPAIN	0946-1108				
49.760.5	TV VIDEO		KO17/Latv.				50 Kw; 22E/57N	Freq.+.0/-.3; dirty
49.760.6	TV VIDEO		JN99/Czec.		POSS.HEARD IN ZL		100 Kw;18E/50N	Freq.+.0/-.2
49.760.8	TV VIDEO		KN97/USSR				35 Kw; 40E/47N	Freq.+.1/-.1
49.770.0	FM TELCO			1050-1302			Tone off/switches	Duplex

50 MHz: Making The Most Of It
Part Five of Six
by:
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Any really long haul 50 MHz propagation (18,000 Km and up) places ZL in a disadvantaged posture. All of Europe is in the 18,000 Km up range. Africa, over the north pole, is in the same range. ZS6 on the southern path is in excess of 14,000 Km. To accomplish any of these paths requires that at least a portion of the path be out of daylight; and hence beyond the reach of the sun's ionizing rays in the F layer.

In areas closer to the geomagnetic equator the approach of dusk does not signal an end to 50 MHz propagation. Often before daylight F2 signals fade, evening TEP (trans-equatorial propagation) signals appear from stations southeast (if north of the magnetic equator) or northeast (if south of the equator). Many of the longer 50 MHz paths such as VK4BRG to 6W1 (2330-0100 UTC) employ a merge of propagations. At 6W1 signals launch into the evening TEP to the northwest. From VK4, signals launch into daylight F layer to the east/NE. At some point over North America/the northern Caribbean, the two modes merge.

The DK2EG report of hearing ZL0AAA signals at 0821 on February 11th is another form of merged propagation. From the German end daylight F2 carried the path northeast across Asia, bending south over China. At or near the coast near V86 the signal path became TEP for the flight across the equator, coming 'down' around middle VK4. The final leg was most probably Sporadic E, linking ZL and VK4.

If ZL were positioned such that routine TEP link-ups were possible, each of us would probably work 50 countries a year with little effort. TEP is the most predictable and dependable form of 50 MHz propagation provided you are located within the TEP zone. TEP is so routine it borders on being dull and uninteresting.

TEP paths extend furthest north and south of the equator during peak periods when signals cross the magnetic equator at essentially a right angle. The nearer your station to the magnetic equator, the better your chances of working at angles that approach the equator's own east-west alignment. Although TEP is usually thought of as a north-south phenomenon, stations within 10 degrees of the magnetic equator can often work sizeable east-west distances within the 'magnetic duct' itself. An example are the 6 meter contacts during March-April of this year between V73AT and stations in LU, CP, ZP. The Marshalls station was coupling into the TEP to his west after 1100 UTC and 'breaking out' into daylight F layer over the Indian Ocean. For the South American stations, they were working sunrise F layer to their east/northeast. The path crosses 14 time zones along the way and is very similar in format to the VK4-6W1 path.

ZL chances of coupling into TEP via Sporadic E are quite good; especially during November to February. Unfortunately, TEP is best in September-October and March-April. In December we can anticipate Sporadic E in the early evenings with a fair degree of optimism. But TEP may only occur one night in five during December even for stations near the equator. The opposite happens in March-April; TEP is virtually nightly, but Sporadic E may only occur one or two nights during the entire month.

TEP coupling can occur at either end of the path, of course. Or both, under extraordinary circumstances. Knowing when there may be Es during the correct time frame (0600-1200) is important. The TEP might last for hours on end (it often covers six hours or more in an evening for stations near the equator) but the Sporadic E on our end is likely to last in a position aligned with TEP for 15 minutes or less. Longer length Sporadic E openings are not uncommon in our prime Es season (mid-November to mid-February), but are most unusual during March-April or September-October.

The best short-skip or Es indicators will be the 46.171 TV carrier from Queensland, the appearence of VK9NS, FK8s and/or 3D2s on six meters. In short, any signals in the 40-60 MHz range, under 1,500 miles, to our northeast-north-northwest between 0600 and midnight UTC, during the months of March-April and September-October establishes the Es link to potential TEP coupling. If you have such indicators to the north, and no signs of longer haul six meter signals, the best thing to do is get on 28.885 and announce you believe conditions are favorable for a TEP link-up north. Remember that within the TEP zones, stations may all but ignore a six hour long TEP opening because it is 'just a repeat' to them of the previous ten or twenty nights. They'll be as anxious to work you as you them, but they may need some prodding to get over to the six meter rig!

Sporadic E link-ups to daylight F2 may also produce long haul contacts to South America (and even Europe) in the 2000-2200 UTC time frame with ZL, beaming 140-160 degrees. This would be especially so during February-May. This also happens to be the best time of the year for North American openings, unfortunately within the same time frame and at 030-060 degrees. Antennas pointed at 'W' don't capture much signal 90 degrees off of boom heading and therein probably rests why we haven't done much of this in the past; we are looking in the wrong direction. Sporadic E during January (1991) produced at least four days when ZL worked KH6, W5,6 and XE via Es link-ups. The F2 didn't extend as far south as ZL at that time of year as it routinely does in March, but a single hop of Es to our north/northeast got us into the F2 zone up around A35/ZK1, in the 2200-0000 time frame.

A more fascinating prospect is ZL working ZS1-6, V51 between 0600 and 0800 UTC beaming 200-220 degrees. Ten meter enthusiasts know April and early May are 'best periods' for working South Africa on ten meters; in this time frame. On April 19, 1991, for example, ZS1-6 and V51 worked throughout VK5,3,6,2 and 4 (in that order in time) for nearly two hours, starting around 0600. The 48.260 Zimbabwe TV signal heard at ZL0AAA had faded out here less than 15 minutes before ZS began working VK5. In effect, ZL lost out on this noteworthy opening by about 15-30 minutes time; the sun was just too far 'down' when the conditions opened from ZS to VK5. This is where a single hop of traditional Sporadic E, from ZL into VK5 (3,2 or 4) at the appropriate point during the African opening would have given us South African contacts on 50 MHz. Or, if the MUF had been a tad higher during the daylight hours and the ionospheric 'battery' charged just a wee bit more, the MUF might still have been at 50 MHz to our south/southwest at 0600 UTC.

Alas, a miss is as good as a mile.

So with Es link-ups, our isolation works against us. A strong Es opening east from ZL lands in open water; the band is open, but we don't hear any signals to alert us. The same applies to our south unless the skip is short enough at 50 MHz to connect ZL1/2 with ZL3 and 4. To the north we have a handful of stations (3D2, FK8) but far more open water than land. Only to our west do we have six meter operation in quantity; and if the Es 'shortens' up to less than 900-1,000 miles we are back listening to waves and surf once again (VK being typically beyond 900 miles).

A brief note concerning two-meter Es. It happens far more often than we suspect. When six meter signals are down to 400-425 miles via Es, the MUF reaches 144 MHz for the same path mid-point. Thus when Christchurch is working Napier on 6, the MUF is high enough at path midpoint (roughly above Wellington) to carry two meter signals out 1,200 miles. Naturally, no two points within ZL proper are 1,200 miles apart so the two meter opening goes un-noticed.

FM broadcast signals from VK2/3/4 are useful as they tell us Es is propagating to around 100 MHz across the Tasman to New Zealand. But for the MUF to climb from 100 MHz to 144 MHz, skip at 100 MHz must shorten up further; to around 600 miles. And 600 miles west of ZL, the point from which 100 MHz signals must originate to indicate a MUF of 144 MHz is ... well, wet.

Which leads us to a secondary method of detecting the presence of very high MUFs, or in the case of F2, very intense ionization; backscatter. If we are not large enough in size to use the conventional methods of detecting high MUFs, backscatter will have to be a substitute.

Backscatter is the term given to a form of propagation often regarded with amusement rather than serious scientific detachment. The term applies to both F layer and Es but the mechanism differs.

F Layer: You point your antenna into an ionized area, such as between ZL and FO5. Several hundred miles north or south of you another ZL does the same thing. You hear each other; signals are typically weak and there is rapid ('flutter') fading. Not all F layer openings produce backscatter; in fact most do not.

Backscatter signals are sort of like having a radar set on six meters; signals leave your antenna and travel into the ionosphere where the ionized layer careens them more or less backwards towards the point from which they originated. You send a signal, and if you could turn off your transmitter and activate your receiver fast enough, you'd hear your own signal coming back. Of course you can't switch from transmit to receive that fast so you rely on other six meter amateurs to detect your reflected signal. The 'backscatter' QSO is your way of reading out your own signal on the 'six meter radar screen'.

The F layer is anything but normal when it creates backscatter. The presence of backscatter is a significant sign the ionosphere is abnormal. If F layer propagation at 50 MHz is itself abnormal, backscatter at 50 MHz is the frosting on the cake.

Several configurations in the ionosphere can cause backscatter; one of the most annoying is when the layer 'tilts' sideways to form a barrier rather than a refractive surface. The tilted layer not only reflects signals back to the area from whence they originated, but it also acts like a wall literally blocking significant further forward motion of your wavefront. You may notice six meter backscatter signals from ZL (or ZL and later VK) but no other DX signals; or very weak DX signals. Then when the backscatter signals begin to fade, the DX signals pop in. That's a sign the F layer has 'righted' itself and is now more parallel to the earth; a plate viewed end-on rather than a shield blocking the signal's passage.

This over-simplifies F layer backscatter but the example is valid; don't walk away when "all you can hear is ZLs on backscatter". Something unusual is happening in the ionosphere.

E Layer: The procedure is the same; you point at a spot (such as Sydney) and another ZL does the same thing. You may (or may not) be too far apart to hear each other directly (on ground wave) or you may hear each other weakly. In any event, the E layer reflects the forward motion signal backwards (as in backscatter) and the six meter radar system is operational.

Like F layer backscatter, Es backscatter is weak (usually even weaker than F layer) although there may not be any detectable 'flutter' fading. The ionized area in the E layer is relatively speaking very small when compared to the F layer ionized area. But the net result is the same; any sign of Sporadic E backscatter on any path from ZL tells you there is very intense ionization out there someplace. And that's when you should be alert to possible two-meter Es openings on the same general beam heading as the backscatter. Oh yes, the presence of rock crushing VK signals on six meters is NOT the time to be heading for two meters to test the path. Like F layer, the super-strong signals are a sign your 50 MHz frequency is right at or just below the MUF; not a sign of probable two-meter conditions.

We'll refine all of this information with our conclusion in next month's Break-In.

50 MHz Propagation
Sidebar/Box Material
For Part #5

ANTENNA RADIATION ANGLE:

Ideally, every ham antenna would keep its radiation at as low an angle as possible; at least for bands above 14 MHz. And we are all well aware of the adage "put your (beam) antenna up as high as possible".

The MINI-MUF(r) propagation prediction program allows the user to plug in the radiation angle of his antenna system. The program's mathematics is accurate although the assumption that all radiation occurs at and not below the specified angle is in error. Most antennas have a rather broad vertical (up and down to the horizon) radiation pattern and while the center of the radiation lobe may well be at (say) 4 degrees, the antenna ERP (effective radiated power) is only 'down' a dB or less up another 4 degrees (ie. 8 above the horizon) or down 4 degrees (at the horizon). Accepting this 'flaw' in the propagation program, compare what it tells us about the maximum useable frequency (MUF) between ZL (Wellington) and California (San Francisco) during the month of March with a solar flux number of 200.

	2000	2100	2200	2300	2400	0100	0200	0300	0400 (in UTC)
8d Rad. Angle:	30.6	33.8	36.4	38.3	39.5	40.0	39.6	38.4	37.6 (in MHz)
4d Rad. Angle:	34.6	38.4	41.3	43.5	44.8	45.1	44.7	43.7	42.2 (in MHz)
0d Rad. Angle:	38.7	42.9	46.0	48.5	49.9	**49.5**	**49.2**	**46.3**	**46.1 (in MHz)**

Obviously, the lower your 50 MHz radiation angle (ie. the nearer your signal hugs the distant horizon) the more hours you will find the band open.

A six meter 6 element yagi on a 24 foot boom will have 70% more radiation at the horizon than a 3 element yagi on an 8 foot boom. Stacked 3 element yagis, 5/8ths wavelength apart, will have 65% more radiation at the horizon than a single 3 element beam. This is for all antennas being no less than 2 wavelengths above ground (12 meters or more).

If you can't get your antenna higher, make it longer. If you can do both, do both. If your location is surrounded with ringing hills, or power lines taller than your antenna, bite the bullet and get the antenna above the hills and power lines.

Openings of three hops or more (ie. beyond 6,000 miles) virtually hug the horizon as signals approach your antenna. Even the slightest obstacle will degrade or block the signal from your antenna. If the signals are strong enough, they will 'scatter' over your blocking obstacle but only at reduced signal levels. And the blocking works on both incoming and outgoing transmissions; you don't hear the DX, and, the DX doesn't hear you!

50 MHz: Making The Most Of It
Part Six of Six

by
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In the 1950s while living in California and operating as K6EDX, I needed only a European QSO to complete WAC on 50 MHz. No-one had ever achieved Worked All Continents on six meters . Now of course G4ASR does it in less than 3 hours.

Living in Fresno, with such as W6BJI (still active on 6 meters), K6GOX or K6GDI, each of us had suddenly realized one day in November we were all very close to WAC; quite by accident. K6GDI would be first, worldwide. It happened this way.

In 1957, with European TV still firmly entrenched in the 41 to 60 MHz region, there was no real six meter allocation. By a stroke of geographic accident EI2W was isolated from TV problems and was able to obtain the first (and for 18 months, only) 50 MHz authorization. If you were going to earn WAC, you had to work Europe. If you worked Europe, you had to work Harry.

For more than a week EI2W's signal had been walking ashore in New England around 1330 UTC. Over the course of 3 to 4 hours it hop-scotched across the USA jumping from W1 to W4, then to W8, W5, W0 and so on. It never made W6.

California to EI is about as difficult at six meters as ZL to VU or 4S7. It has been done only once in the present sunspot cycle; not at all in the previous cycle (21).

K6GDI's six meter rig had an 832A driving an 829B to perhaps 90 watts. The 829B, modulated with a pair of 807s in a loafing mode, was unconditionally unstable. 'GDI' spent years trying to neutralize the beast.

On this particular November morning GDI was in his shack playing with the cross wire neutralization paying absolutely no attention to six meters. But his receiver was turned on. After nearly four hours of walking the skip across North America, EI2W heard the last eastern U.S. signal fade out and nearly turned off the rig. But, there was a screech in his receiver like nothing he had heard before, and after careful tuning he found the center of a signal that was essentially a modulated free floating oscillator. It was K6GDI's final gone beserk.

Five minutes later K6GDI had worked his sixth and last continent. But that's not the story here.

Across the small city of Fresno, less than five airline miles distant, W6BJI and this writer were glued to six meters as word worked west that EI2W's signal was 'on the way'. Never in the history of six meters had two people listened so carefully for a specific signal. Both Gib and I heard the (to us) all too frequent squawks of GDI's 829B final that morning. Both of us resisted the urge to landline GDI to ask that he hold off his incessant testing this particular day.

Worst of all, neither W6BJI with a six element long yagi nor I with stacked four element yagis 100 feet above ground heard even a hint of the EI2W signal. Five miles from K6GDI, we heard nothing but the K6GDI tests and his mumbling (which we later learned was his QSO with Harry in Ireland).

Gib figured out what was happening before I did and he called K6GDI on the telephone just as Bob was saying 73s to the Irish station. The phone was answered with the happy voice of EI2W pouring out of the GDI speaker into the telephone handset. That's all Gib had to hear; K6GDI actually did work EI2W (as the airmailed card five days later would attest)!

Amusing, but so what?

Fresno, California is flatter than Lake Taupo on a windless day. K6GDI and W6BJI and I could literally see each other's antennas if any of us stood atop our towers. Yet EI2W's signal climbed out of the noise and was over S9 only at K6GDI's shack. Neither W6BJI nor I detected even a trace of this signal.

Which brings us to the perhaps overly wordy point. Six meter propagation can be very spotty. Remember the tip of the iceberg? There is a focusing effect in the propagation of 50 MHz signals via F layer and that focus 'sharpens' with each additional 'hop'. A single hop (2,500 mile) may in the best of conditions illuminate a footprint several hundred miles on a side. Extend that from single hop to double hop (up to 5,000 miles) and the footprint can easily be down to a few tens of miles on a side. Go outward to triple hop (up to 7,500 miles; the probable case for K6GDI to EI2W) and the footprint can be ... well, we know it can be less than five miles across because we were there!

In the case of EI2W to K6GDI, only K6GDI worked Harry before his signals waltzed off the coastline into the Pacific; or more likely, the 'EI2W footprint' drifted away from Fresno across areas of California where there were no other six meter stations. For EI2W, the 'band died'.

Of course not all six meter openings are this clearly footprint-defined. But virtually all six meter openings do have relatively small footprints (ie. an area in ZL where the station can be heard and worked) and the footprint is almost never stationary. There are several things to be learned here:

1) Just because ZL2KT is working PJ9EE and you can't hear the PJ9 is no sign you won't hear the Curacao station yourself shortly. And chances are when you do hear him well enough to QSO, ZL2KT will have lost his signals.
2) Some footprints 'dance' across ZL from north to south, others in reverse. Still others travel east to west (although seldom west to east). If there is backscatter present, you can follow the DX signal up (or down or across) the country as it moves towards you (or, away from you) by simply monitoring the ZL end of the contact. And if the pattern is north to south Tuesday, it could just as easily be south to north on Wednesday. Look for 'patterns' day to day if you must, but don't believe what you see is proof of anything. For ...
3) Six meters is totally unpredictable!

And an opening may begin 'spotty' and then shift to a ZL-nationwide footprint. There can be a wide footprint W5/6/7 opening to virtually all of New Zealand and smack in the middle YVs and eastern Caribbean stations pop up in northern North Island; and only there. The message here is don't write off any opening just because the opening sounds 'typical' or 'standard'. Another illustration; during a 'standard' mid or late April opening to W5, out pops a string of W3,8 and 9 stations. How come? Well, April marks the beginning of the Sproadic E openings in the northern hemisphere and when one of these links Texas (to which you have F2) with more northern states, well ... suddenly you've worked five or six new 50 MHz states.

Out Of The Ordinary:

On March 26-27, 1991 the WWV reported A or Alpha Index was 63. That's about as high as Alpha rises and certainly magnetic conditions were badly disturbed. Was six meters dead?

Shortly before the sun rose (around 1900 in most parts of ZL) six meter receivers connected to antennas pointing east or northeast rose to S3, then S7 and finally S9. Solar noise was incredibly strong, blanking out all but the strongest signals. Ten meter signals were also buried in S9+ solar noise levels, and, lost in D layer absorption. In fact, if you tuned across ten meters, upwards between 30 and 50 MHz, you heard almost no signals at all.

The D layer, our nearest-to-earth ionospheric layer and the one responsible for daylight absorption at 3.5, 7 and 10 MHz on a normal day, had become so heavily ionized the absorption was now in excess of 40 MHz. The absorption signal loss combined with the extraordinarily high solar noise levels made most bands useless for nearly 3 days.

But, if you could hear through the solar noise levels, six was open very nicely, thank you. From New Zealand to throughout North America, the Caribbean and the Pacific, hundreds of 6 meter QSOs took place.

A casual observer might suggest the skip was working 'backwards'; ie. from 'the top down' (6 meters opened before, or, instead of 10!). Actually, the combination of unusually high D layer absorption soaking up signals below 40-45 MHz (it varied through the 3 days; sometimes absorbing as high as 48 MHz as observed at ZL0AAA), and, the S9+ solar noise levels simply wiped out the bands below 6 meters. The message? Had you checked ten and found it 'dead' and 'noisy', you might have never bothered to check six meters. On the other hand if you stopped and said to yourself "Wait a minute ... ten should not be completely dead at 10 AM in the morning!", that would have been a clue something very unusual was occuring in the ionosphere. And when something unusual happens...what's the first thing you do, even if you don't know what is happening?

Check six meters; of course!

Those Elusive Paths:

Until 1990, only a handful of ZL stations had access to the full six meter band 24 hours a day. In 1991, ZL activity multiplied many fold and for the first time since the late 1950s (when we lost the band to TV channel 1) ZL is really on six. 1957 was three full sunspot cycles ago. It is as if ZL had gone 'Rip Van Winkle'.

In three cycles everything except conditions have improved (Cycle 19 is likely to be the best cycle anyone now alive experiences). ZL to Europe, ZL to Africa and much more is unknown. Because six meters stayed alive and well in North America while we played Rip Van Winkle, and because six meters in Europe has also only really happened in this cycle, much of the six meter 'intelligence' is heavily accented with the North American imprint. That means even inter-related effects such as coordination activity on 28.885 is largely dictated by the North American DX season. That's mid-September through mid-April.

Our DX season, on the other hand, is a half year out of phase with North America; in theory it should last through May and June. There remains a great deal to be 'discovered' about 50 MHz within the southern hemisphere. It was only on April 20, 1991 that the first Brasilian (PY5CC) to Australia (VK7IK) QSO took place. At this writing, Brasil has not been worked in ZL.

What is required is more day to day attention to MUFs below six meters through the May-June and August-September periods, not only in ZL but throughout the southern hemisphere. The message? Because the Ws lose F2 propagation does not mean the rest of the world (especially the Southern Hemisphere) should turn off their six meter radios for five months. A dedicated TV DXer in western Australia, Anthony Mann, has demonstrated by receiving ZL channel 1 TV via F layer right through mid-June that the conditions are not dying; just the operators.

What we now know about 50 MHz propagation in the southern hemisphere is perhaps only a fraction of what is yet to be learned. You can hang around waiting for Ws and JAs to appear (and then see how many you can work in a single opening), or you can buckle down and work at making the most of the band. It is truly the most fascinating amateur assignment available to us, but the DX conditions won't come looking for you.

50 MHz Propagation
Sidebar/box material
Use with Part #6

UNOFFICIAL SOLAR DATA ADVICE:

Although there may be no direct repeatable relationship between solar flux/A and K numbers, and, predictable six meter F2 related conditions, there are a few 'guidelines' to keep in mind.

1) Sun Rotation Cycle: The sun rotates on its own axis in just over 27 days time. Spots appear at the WEST (LEFT hand) limb of the sun first and as the sun rotates the spots seem to move LEFT to RIGHT to observers. If a particular spot or group of spots when facing earth seems to have an effect on our ionosphere, you can properly 'predict' similar effects on the ionosphere approximately 27 days later; as the same spot/group again faces towards earth. Individual spots or groups typically last at least two rotations of the sun but seldom more than four. The effects from the spots seldom repeat more than once however even if the spots repeat additional times.
2) Solar Flares. Eruptions within a sunspot or spot group are called 'flares'. Observatories on earth can actually see the flares (at the speed of light, so to speak). A flare emits extra strong doses of X-RAY material. The X-RAY material approaches earth and is directed by the Van Allen Belt towards the magnetic poles. This extra X-RAY energy creates auroras. The F layer is penetrated by this energy and a new absorption layer forms below the F layer cutting off signals. The absorbing layer created by the massive X-RAY dose causes shortwave radio fade-outs; ie., all signals disappear. It's the same thing that happens to long-haul 3.5 and 7.0 MHz signals with daylight each day; only the X-RAY energy extends the absorption effects up to between 15 and 50 MHz; a function of the strength of the X-RAY dose.
3) Solar flares are graded by observers; letters ('X', 'M') and numbers. The flare is seen first, followed shortly by the arrival of the X-RAY energy. A very significant flare will also send out slower moving energy particles which arrive around 48 hours after the observed flare. This is called a 'proton event' and on a scale of moderate to massive, proton events are the grandfathers. They have been known to overload hydro lines in Quebec and Russia, create visible auroras seen up into North Island or down into the Caribbean (March 11 and September 30, 1989). Needless to say, conventional shortwave radio is all but useless during a proton event, although auroral reflective propagation may be spectacular (ie. ZL3/4 beaming south on 6 or 2 meters to work VK2,3, or 5).

50 MHz Propagation
Sidebar/Box Material
Use With Part 6

PRIME INDICATORS:

The most exciting openings are/will be to areas where six seldom (or has never, yet) open(s)(ed). But even lacking contacts, there is much we already know about what to expect as such openings occur. That's because of 'Propagation Indicators'; transmissions we can detect at frequencies below 50.000 MHz, which in theory should be heard before (ten minutes, an hour) signals actually show up above 50.000 MHz.

AFRICA:

Eastern Path (beaming 120-155 degrees) between 1900 and 2300 UTC.
Same beam heading, time could also produce Argentina/Chile/Uraguay/ Paraguay/Brasil, and, southern Europe/North Africa (EA, CT, I, CN8).

1) 47.900 wideband FM: Instrumental music only, up to 25 KHz deviation (doesn't sound good in a communications receiver!); located Santiago, Chile.
2) 47.970 wideband FM: Santiago, Chile, lower deviation than 47.900.
3) 48.241.3, 48.249.2, 48.251.0 (Channel E2) TV video carriers.
4) 46.259 AM: Argentina broadcast harmonic, believed Buenos Aires.
5) 45.800 2-Way FM: Portuguese, believed Brasil.

Western Path (beaming 200-230 degrees) between 0500 and 0730 UTC.

1) 42.800 2-Way FM: South African police communications.
2) 44.106 A0 (unmodulated) carrier; may have RTTY at times. believed to be South African link.
3) 48.260.0 (Channel E2) Zimbabwe TV video carrier.
4) 43.040 2-Way FM: African base to mobile communications.
5) 43.140 AM: Broadcast program relay, believed South Africa.

EUROPE (See Africa for eastern path heading):

Northwestern path (beaming 330-350 degrees) between 0730 and 1000 UTC.

1) 46.171 Queensland TV video carrier (required link via Es to TEP/F2).
2) 48.249.2, 48.249.0, 48.249.8, 40.250.8/48.251.0 (Channel E2) TV video carriers (Note: At least five Thailand/Malaysian TV video carriers also in this range and confusing them for European video carriers is very easy to do!).
3) 49.743.1, 49.752.0 (Channel C/R1) TV video carriers (Note: Between 49.736.4 and 49.764.9 are more than 30 different Chinese and Soviet TV video carriers. ONLY these two have been by time-of-reception isolated exclusively to eastern Russia. Do not be mis-lead by any of the 'other 30'.

48/49 MHZ TV VIDEO CARRIER FREQUENCIES
Updated: 25/06/91
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Background:

50 MHz (six meter) enthusiasts worldwide utilize the 48.(25 nominal) and 49.(75 nominal) TV video carriers (European channel E2, Russian channel R1) as propagation indicators. TV station operators, by their own choice or by national licensing authority instruction, operate on specified frequencies which are seldom **precisely** 48.250(.0) or 49.750(.0). In an attempt to locate as many TV transmitters as possible within a given region, licensing authorities routinely specify 'precise offsets' for the transmitter operating frequencies. This reduces or eliminates 'co-channel' on-screen (video) interference between two (or more) transmitters operating in the same channel (such as E2). The worst possible scenario for fringe area TV viewing is for two or more stations to arrive at the same receiving location 'more or less' on the same frequency. The frequency difference between the two carriers produces a 'beat', just as two amplitude modulated signals on AM or shortwave 'beat' and form a heterodyne you can hear. In the case of video the two beating carriers produce a low frequency beat of a few hertz to few kilohertz, resulting in 'co-channel interference lines' in the video on the screen.

Experiments in the 40's and 50's revealed that if TV transmitter frequencies are offset by 10 or 20 kilohertz, rather than by some random amount, the 'video beat' or lines on the TV screen are less objectionable to the viewer. This is called 'offset' operation; the TV transmitter carrier frequency is offset from the nominal video frequency (ie. 48.250 or 49.750) by either +10 kilohertz or minus 10 kilohertz. These are commonly referred to as 'plus' and 'minus' offsets.

Offset assignments are known and occasionally published. Two well regarded lists are published in Europe (1) and North America (2) for TV DXing enthusiasts. Of these two lists, the North American lists taken from Federal Communications Commission and (Canadian) Department of Transport records are most reliable. European/west Asian lists must come from numerous federal licensing agencies because of the number of countries involved; their accuracy is less dependable.

A television station is ASSIGNED an offset frequency; either 'minus', 'plus', or 'even' (which is no offset at all). It is up to the station to maintain its own transmitter operating frequency within the window allowed by its regulatory agency rules. Worldwide, stations typically strive to maintain frequency stability (long and short term) of +/- 1.0 kilohertz. Some stations do much better than this, typically +/- 0.1 kilohertz.

If you utilize these station signals as 50 MHz 'DX opportunity' propagation indicators, and if you know their (a) assigned frequency, plus, (b) their operating frequency stability, and, (c) their ACTUAL 'typical' operating frequency, then with suitable receiving equipment you can turn a logging from the zero-beat frequency readout on your receiver to a 'probable transmitter source' in your records. This assumes only that you have some method to verify the accuracy of your own receiver's frequency readout in the zero-beat mode. (It is worth noting that if you have a TV transmitter near you which you can read out on your receiver, it's own KNOWN

operating frequency becomes a secondary frequency standard against which you can calibrate your own receiver.)

METHOD:

While operating six meters from the Azores June 05-27, 1991, tens of hours were spent monitoring and decoding TV transmissions received via Es. Signals were displayed on an ICOM 575H receiver (readout to nearest 100 hertz), compared against a known standard, and checked using TV DXing techniques for program content/programming sources. Fourteen of the 48.25 MHz (nominal) transmitters and nineteen of the 49.75 MHz (nominal) transmitters within 'Europe' were received via Es multiple times to allow not only spot measurement of their operating frequency, but a recording of the change in operating frequency over the 22 day operiod. The data which follows analyzes these observations and measurements.

1) 48.25 MHz: European Channel E2.

Excluding African, Middle-East Asian and Far-East Asian stations, there are 17 known stations on channel E2. Fourteen of these transmitters were received often enough and for long enough to create the following listing.

OP.FREQ.	COUNTRY	COORDIN.	TR PWR.	GRID SQ.	F/VARIATION	LOCATION
48.237	Belgium	04E/51N	0.1 Kw	JO21	**NOT LOGGED**	Antwerpen
48.239.4	Sweden	15E/59N	60 Kw	JO79	(+/-.1 KHz)	Ore Orebro
48.239.7	Germany	07E/49N	100 Kw	JN39	(+.1,-.2)	Saagottelborner
48.241.1	Portugal	08W/42N	40 Kw	IN51	(+.2,-.1)	Muro (a)
48.246.1	Norway	05E/61N	30 Kw	JP21	(+1.0,-.1)	Gulen
48.247.3	Germany	08E/51N	100 Kw	JO41	(+.2,-.1)	HesBiedenkopf
48.249.2	Norway	30E/70N	30 Kw	KQ50	(+.3,-.5)	Varanger
48.250	Germany	11E/51N	0.1 Kw	JO51	**NOT LOGGED**	Weimar-Nohra
48.250	Yugosla.	Unknown	Unk.	Unk.	**NOT LOGGED**	Poppeca
48.250.0	Sweden	20E/64N	60 Kw	KP04	(+/-.1 KHz)	Vannas
48.250.1	Switzer.	07E/47N	48 Kw	JN36	(+.0,-.3)	Bantiger
48.250.2	Spain	04W/41N	250 Kw	IN80	(+.0,-.2)	Madrid (b)
48.251.9	Spain	08W/43N	40 Kw	IN52	(+.2,-.0)	San.de Compost.(c)
48.253.3	Norway	08E/58N	60 Kw	JO48	(+.1,-.7)	Griepstad
48.255	Sweden	17E/63N	0.15Kw	JP83	**NOT LOGGED**	Jambispfors
48.257.0	Norway	10E/63N	100 Kw	JP53	(+.0,-.9)	Melhus
48.260.5	Germany	10E/47N	100 Kw	JN57	(+.1,-.0)	BayGrunthen

a) Transmitter closes down around 0030 UTC, re-opens around 0730 most days.

b) Transmitter **appears** to be 24 hours Friday, Saturday nights (local)

c) Transmitter appears to be 24 hours random days; note Spain 48.250.1 is TVE-1 network, 48.251.9 is TVE-2 network; programming and hours not identical.

1) Worldwide TV-FM DX Association, P.O. Box 514, Buffalo, N.Y. 14025. Request TV station offset directory.

2) 44-108 MHz TV Stations Worldwide, % Gunther Lorenz, Mittlerer Graben 35-75, D-8050 Freising, Germany (also available at HS Publications, 7 Epping Close, Derby DE3 4HR, England [L8.85 postage paid to USA; L6.70 postage paid in UK]).

2) 49.75 MHz: (Russian Channel R1)

Although Russian assignments on R1 are published for the entire 11 time zone wide country, arbitrarily only those assignments west-of 40 degrees east are included here; a function of drawing a line out 3,300

miles from the Azores observation point and making the assumption most reception via Es (EE or even EEE) would be within this zone. Some Russian R1 transmitters have published offsets; many do not. This may be due to their offsets being unknown, or, because they are **not** offset from 'even' (ie. 49.750). A few 'former satellite countries' (Hungary et al) also use R1; plus a single Austrian transmitter. Virtually all Russian stations on R1 are network-affiliated with Central Television (One/CT-1), the primary 'first channel'. Most transmitters operate as satellite relays, without local announcements or identification. This complicates POSITIVE identification in the TV DX sense where you 'count' a station ONLY after obtaining verifiable program content information. If several dozen transmitters all on the same 'channel' carry the same program at the same time ... well, you can see the magnitude of the challenge. POSITIVE identification is at best 'iffy'.

Having said that, **repeated** loggings of individual transmitters, grouped together with other transmitters between 25 and 100 MHz from the same 'region', makes it possible to pin-point specific transmitter frequencies to specific transmitter sites with perhaps a 90% accuracy. That is a caveat; this information is the best available, skillfully collected, but not infallible. Additions, corrections gratefully accepted.

OP.FREQ	COUNTRY	COORDIN.	TR PWR.	GRID SQ.	F/VARIATION	LOCATION
49.739.7	Czecho.	14E/50N	150 Kw	JO70	(+.0,-.1)	Prague (a)
49.739.7	Ukraine	33E/53N	35 Kw	KO62	(+.0,-.0)	Voronez
49.737.9	USSR	38E/59N	35 Kw	KO88	(+.0,-.1)	Cherepovets
49.740	USSR	24E/50N	150 Kw	KO20	**NOT LOGGED**	Lvov
49.740	USSR	34E/45N	50 Kw	KN65	**NOT LOGGED**	Simferopol
49.740.1	Hungary	19E/47N	150 Kw	JN97	(+.1,-.1)	Budapest (b)
49.741.0	USSR	35E/68N	10 Kw	KP78	(+.0,-.0)	Lovozero
49.744.2	Hungary	17E/46N	50 Kw	JN86	(+.3,-.2)	Nagykanisza (c)
49.747.5	USSR	38E/56N	300 Kw	KO85	(+.1,-.1)	Moscow
49.748.8	Poland	18E/53N	120 Kw	JO83	(+.0,-.1)	Bydgoszcz (d)
49.750	USSR	39E/45N	50 Kw	KN95	**NOT LOGGED**	Krasnodar
49.750	USSR	40E/44N	35 Kw	LN04	**NOT LOGGED**	Soci
49.750	USSR	29E/61N	25 Kw	KP41	**NOT LOGGED**	**Kamennogorsk**
49.750	USSR	40E/58N	10 Kw	LO08	**NOT LOGGED**	Kostroma (e)
49.750	Latvia	25E/57N	10 Kw	KO27	**NOT LOGGED**	Stucka (f)
49.750	Ukraine	31E/50N	1 Kw	KO50	**NOT LOGGED**	Kijiv
49.750	Lithuan.	21E/54N	0.1 Kw	KO24	**NOT LOGGED**	Druskinankai
49.750.1	USSR	27E/54N	150 Kw	KO33	(+.0,-.2)	Minsk
49.750.1	USSR	34E/65N	10 Kw	KP75	(+.0,-.0)	Kuzema
49.750.1	Austria	15E/48N	60 Kw	JN78	(+.1,-.0)	Jauerung (g)
49.750.2	Ukraine	33E/48N	35 Kw	KN68	(+.0,-.0)	Krivoi Rog
49.750.4	Czecho.	18E/48N	0.15Kw	JN98	(+.0,-.2)	Sturovo
49.750.7	USSR	30E/60N	240 Kw	KO59	(+.0,-.0)	Leningrad (h)
49.757.9	USSR	30E/56N	90 Kw	KO56	(+.1,-.1)	Velikije
49.758	USSR	32E/63N	10 Kw	KP63	**NOT LOGGED**	Sukkozero
49.759.9	Ukraine	29E/51N	50 Kw	KO41	(+.0,-.0)	Ovrutch
49.760	USSR	39E/52N	35 Kw	KO92	**NOT LOGGED**	Ungtcha
49.760.5	Latvia	22E/57N	50 Kw	KO17	(+.0,-.3)	Kuldiga (i)
49.760.6	Czecho.	18E/50N	100 Kw	JN99	(+.0,-.2)	Ostrava (j)
49.760.8	USSR	40E/47N	35 Kw	KN97	(+.1,-.1)	Roston-na-Donu

Unlisted:

Following logged, not shown on published lists. Possibly from east of '40-east', or, simply new transmitters not known to list publishers.

49.738.5 Possibly between Leningrad and Ukraine; varies +.0,-.0

49.749.3 Dirty video carrier, poor power supply filtering; no guesses.

49.755.2 Possibly between Murmansk and Leningrad; varies +.1,-.0

Footnotes:

a)Czechoslovakia national network (known as CST-1); programming not same as CT-1.

b)Hungarian national network (known as MTV), programming not same as CT-1.

c)Hungarian network; see b).

d)Polish national network (known as TP-1); transmitter scheduled to be shut down in favor of new UHF channel but still operational June '91.

e)Station fed from Leningrad with programming that parallels CT-1 only part of the day; balance is originated from Leningrad regional studio.

f)Station originates Latvian TV which given current political turmoil probably does not include any CT-1 programming. See i) here.

g)Officially, ORF is not operating on channel R1 but rather E2A. R1 transmitters have their audio +6.5 MHz (ie. nominally 56.25); ORF on E2A has audio at 55.25 MHz (+5.5 MHz).

h)Leningrad produces some of its own programming for feed to other nearby stations, integrating same with Moscow originated CT-1 programs. Therefore program content at any instant may vary from CT-1 feeds on other satellite-fed transmitters.

i)Station is less than 100 miles from Latvian transmitter on same channel, noted in f) above. Latvian TV was not positively logged; it may be on air only as purposeful 'jammer' to this official CT-1 outlet in Latvia. This CT-1 transmitter has distinctive 'dirty' sound in CW/SSB mode zero beat, characteristic of poor power supply filtering (accidental or on purpose since poor filtering increases interference potential to other stations on same channel.)

j)Czechoslovakia national network; see a) here.

-30-

ARTICLE ON RELATED TOPIC TO RUN POPULAR COMMUNICATIONS THIS FALL — BOB (USE ANY YOU WISH)

HIGH PERFORMANCE TV DX 'TOOL'

by Bob Cooper, Jr. ZL4AAA/K6EDX/VP5D et al
P.O. Box 330
Mangonui, Far North
New Zealand

Not everyone is addicted to long distance television reception. But in this day and age of instant worldwide satellite TV 'connection', there is still a charm involved in seeing a far away station **direct**, via 'natural' as opposed to artificial 'propagation'.

During this period of high sunspot numbers, with the F layer riding a crest of peak MUFs (maxium useable frequency), 40 to 50 (+) MHz signals from many TV transmitters are finding their way a quarter, even half way around the world. And in some portions of the world, television stations still operate in this frequency region; New Zealand, for example, has its visual carriers in the 45.25 MHz region.

Six meter (ham) enthusiasts are finding the video transmitter carriers from New Zealand and Australian, Far East, African and European transmitters are excellent 'propagation indicators'. When the skip reaches into the 45+ MHz region, these TV carriers bounce over distances of thousands of miles. And with transmitter powers as high as 300 kilowatts, the F layer propagated signals often reach incredible strengths. Tuned in on a six meter ham transceiver or a scanner receiver capable of tuning the 30-50 MHz range, the presence of these distant carriers on a receiver signals the liklihood of 50 MHz DX signals as well.

Now, if you can hear the carrier on your receiver, could you not also watch the video?

The first problem is the frequency. An American-intended NTSC format TV receiver starts out tuning in channel 2; 55.25 MHz video carrier frequency. Worldwide, New Zealand TV channel 1 at 45.25 MHz, Australian TV channel 0 at 46.25 MHz, European/African/Asian channel E2 at 48.25 MHz, and Russian channel (R)1 at 49.75 MHz are all below the varactor-diode-tuned front ends on American TVs. Yes, you could climb inside your $800 Sony to re-tune it, but ....

The second problem is the audio carrier (or sub-carrier). NTSC, the U.S. kind, video places the audio carrier 4.5 MHz above the visual carrier. New Zealand, Australia, much of the rest of the world place their audio 5.5 or 6.5 MHz above the video. NTSC receivers have IF amplifiers and audio discriminators based upon the +4.5 MHz format. So even if you do retune your TV tuner to cover 45-55 MHz, you won't recover audio if the distant TV transmitter audio is outside of the passband (and away from the discriminator) of the receiver.

A Solution?

Television DXing enthusiasts in Europe have faced this sort of problem for several decades since TV transmission standards in Europe are mixed across national borders. Even casual viewing of neighboring country transmissions often requires 'standards conversion'; a change in the TV set's method of handling signals. Today, multiple-standard TV sets abound on the European market; even simplistic black and white portables are often switchable between two or three formats.

There is another solution; a special 'front end' created by European TV DX designers. It's called the DX-TV Converter (model D100) and for around (US$)200 your NTSC TV set with no external modification(s) can tune-in both

the video and audio from virtually any TV transmitter in the world.

The D-100 (see footnotes) is a tool for the serious distant-TV reception enthusiast; it was designed that way. Modern TV sets do virtually everything for you, automatically. All that automation reduces not only what you do but more importantly what you **can** do. The D100 returns to you those operator adjustments that may make the difference between logging Television New Zealand and being frustrated with snowy lines of interference.

1) The D-100 has a continuously tuned front end in three bands; 45-108 MHz, 165-230 MHz and UHF 460-870 MHz.
2) The incoming RF signal is IF processed and up-converted to a UHF TV channel between 470 and 630 MHz.

An antenna delivered signal between 45-108, 165-230 MHz or 460-870 MHz is down converted to the IF, amplified, and with a front panel control the bandwidth of the IF amplifier may be reduced from around 6.5 MHz to as little as 1.5 MHz. Like any IF bandwidth reduction system in a ham transceiver, reduction in bandwidth improves weak signal reception (at some loss of picture detail information, of course). This IF bandwidth control can be an important tool in resolving specific DX pictures under weak signal or interference laden reception conditions.

3) The up-converted TV signal tuned in with the front end is fed to your NTSC (or other) TV receiver on an unused (in your area) UHF TV channel between 470 and 630 MHz. An adjustment internal to the D-100 allows you to select the UHF 'output' channel you require at your house.

To this point we have a frequency but not a standards converter. If the sound is +5.6 or +6.5, or the video is 625 lines/25 frames (versus NTSC's 525 lines/30 frames per second), you still will have unresolved video and audio, even after **tuning in** the distant signals.

Pure standards conversion (ie. translating 625 lines/25 frames to NTSC/30 frames) remains an expensive proposition; although a recently released 'world standards' Panasonic VCR gives it a go at around $2,000 U.S.. Let's look at the video first.

A 625 line/25 frame video will lock up (hold stable) on an NTSC receiver **provided** you can activate a vertical hold control on the TV set. The pictures will flicker just abit because of the frame difference, but if the TV set you will use has a user-adjustable vertical hold, it will no longer 'roll' on you. Of course it will not recover in color since 625 line systems use a different color creation technique (called PAL) but you will hardly notice this as you tune in tomorrow morning's news from Television New Zealand at 4 in the afternoon east coast time.

The sound. Here the designers of the D-100 "Deluxe" version have done a very creative thing. As the TV video and sound (ie. composite signal) passes through their IF for gain and filtering, they couple off energy at the TV sound (sub) carrier frequency, feeding it back to you on an FM (radio) band frequency between 95 and 108 MHz. A cable coming from the D-100 is connected to the antenna input on your FM tuner/receiver, or merely looped around the FM 'rod' antenna of your portable FM receiuver. You locate a clear (not in use locally) FM channel between 95 and 108, and then slowly adjust a knob on the D-100 until you magically hear the TV sound on your FM receiver. That's it!

Additional Controls

The D-100 is available in standard and "deluxe" versions. Unless you happen to own a multi-standard TV set capable of resolving +4.5,+5.5 and +6.5 MHz audio (sub) carriers, the "deluxe" version with the FM band

sound reproduction is recommended.

Both versions have an RF gain and an IF gain control, a main tuning plus a fine tuning control, switch selectable IF bandwidth. The main tuning knob is calibrated with the TV channel selections of 'the world' to help you know where you are tuning at all times. The literature/instructions provided is brief but concise with many useful bits of information and long distance reception tips. The D-100 is well designed, skillfully built, and pleasant to use. Those are the positives.

There are two negatives for a North American buyer:

1) It is presently only available from an European (English) source (see footnotes; they will ship air parcel post anywhere) and you'll need a VISA card or an English pounds bank draft to acquire one.
2) Standard power supply mains in Europe are nominally 240 volts AC and your home is wired for 110 volts AC. They can supply a 12 volt DC version on request which you can power with a Radio Shack supply.

Reception Tips

If you have no TV DXing nor six meter amateur experience, you will be pressed to learn a few things about how and when distant signals propagate ('skip') to properly enjoy this gadget. Here are some very basic rules:

a) From North America, the periods mid-October to mid-December and mid-February to mid-April are best for long distance reception. The (North American) fall is best for Europe and Asia, the spring for New Zealand and Australia.
b) Peak skip always occurs when the sun is approximately mid-way between you and the station(s) you are trying to receive; ie. 8AM to 12 noon your local time for European stations to your east, 2PM to 6 PM for Asian stations to your west. In the spring, 12 noon to 5 PM your time for stations from New Zealand and Australia.
c) Conditions from day to day vary considerably. You may go through a week with no DX reception, then have a week of fun filled hours each day. Good periods of conditions tend to repeat in 27-28 day cycles; ie. if you find October 10-15 good, you should also find November 06-11 good again. If you have a ham band SSB receiver, tune in 28.885 in the ten meter band (upper sideband) during daylight hours for a blow by blow account of conditions that day. Six meter hams congregate here for coordination purposes and the information exchanged will give you real-time tips on what is happening world-wide.
d) A low band (U.S. channels 2-6) capable TV antenna will be adequate for most enthusiasts; signals tend to be very strong and the reduction in TV antenna gain below TV channel 2 (54-60 MHz), in the 45-54 MHz region, should not be a serious problem.
e) Reception will often fade rapidly, no matter how strong the signal, causing 'smeared' or ghosty images on the screen. Don't expect local grade pictures even when the signals are as strong as locals; the long distance the signal travels results in something called 'multi-path'; hence the ghosting and rapid fading.
f) Because the sound is always on a higher frequency than the video, you will see the picture before you copy the sound. On some days you may hear nothing, but still see great pictures; the skip simply did not 'reach as high as' the audio channel frequency on those days.
g) In western Europe alone there are 17 TV transmitters operating on TV channel E2 (48.25 MHz video; 53.75 MHz audio). F layer skip

is often continent-wide causing pictures from several distant TV transmitters to 'come through' simultaneously. This is called 'co (as in same)-channel interference' (CCI) and the effects are intriguing; one picture locks up, fades and is replaced by another picture from another transmitter (and perhaps another country). Pictures swapping back and forth between Norway, Sweden, Germany and Spain is not unusual. In between 'lock up' of a single dominant picture, the screen is a maze of jumping horizontal lines and the sound portion just 'howls' at you.

h) You can record for later review or the amazement of your doubting friends your reception using video recorder and/or 35 MM still techniques. The VCR can be placed in between the D-100 and the TV set's UHF tuner with a two-way splitter, tuning the VCR tuner to the same UHF channel as the TV set. With a 35 MM camera, use ASA 100-200 **black and white** film with the aperture set at 4.5-5.6 and the camera speed set at 1/25th-1/30th of a second.

References

In the footnotes are several additional sources for information. The present sunspot cycle (called 'Cycle 22') will produce long distance TV reception as described here through at least the spring of 1993. The next chance for such reception will not return until around 2000 so if this subject intrigues you, the clock is running!

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References/Sources:

1) D-100 Deluxe DX TV Converter: Available only from HS Publications, 7 Epping Close, Derby DE3 4HR England (00-44-332-38-1619 from USA).
2) World list of TV stations, channels, powers: World Radio TV Handbook, available at leading book and ham radio electronic stores, or through Billboard Publications, Inc., 1515 Broadway, New York, New York 10036.
3) Club of TV DX enthusiasts, publishes monthly newsletter: Worldwide TV-FM DX Association, P.O. Box 514, Buffalo, New York 14025-0514. Request sample bulletin, membership application.

-30-

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Photo Caption:

D-100 Deluxe DX TV Converter fits into the palm of your hand but extends the reach of your TV set to worldwide proportions. See text.

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Box Material:

WHAT YOU MAY SEE!

A) Europe: Sweden, Norway, Portugal, Spain, Germany, Czechoslovakia, Hungary, Poland, Latvia, Lithuania, and Russia.
B) Asia: Russia, China, Malaysia, Thailand.
C) Middle East: UAR, Iran, Iraq, Saudi Arabia.
D) Africa: Zimbabwe, Ghana, Kenya, Sierre Leone, Guinea
E) South Pacific: New Zealand, Australia

For 'pure quality', New Zealand and Australia during mid-February to mid-April will be best for most U.S. enthusiasts although the eastern half of the continent will do very well with European reception in the fall period. With South Pacific reception, the quality is traditionally 'better' (than Europe) because there are fewer TV transmitters on these low channels in these areas, resulting in less interference for you from multiple TRANSMITTERS.

A S I A N N E W S

SAUDI ARABIA 6M ACTIVITY: The only active HZ station QRV on the 6M band (HZ1AB) had access to the band denied during the recent Gulf Crisis. However, Bert Godlewski has been using the callsign W2USA/MM from grid square LL57. (Tnx G4UPS)

ZC4MK NOW QRT: Adrian McGonigle ZC4MK has gone QRT and is now active back in England as **GØKOM.**

CYPRUS QSL INFORMATION:
5B4JE: Aristides Kaponides, Box 1723, Limassol, Cyprus
5B4ZL: Jon Carp, ENG 280 SU, BFPO 57, London, England
5B4TX: Costi Costis, Apollo Court, Shop C, 232 Markarios Ave, Limassol, Cyprus

JU1JA (MONGOLIA) DX-PEDITION RESULTS: Jun-ichi Nishihara JR3HED has sent along the following results of the JU1JA (JA1UT) 50 MHz DXpedition:

CALL AREA	JUNE 1	JUNE 2	JUNE 3	JUNE 4	JUNE 5	JUNE 6	JUNE 7	JUNE 8	JUNE 9
JA1	2	182	0	0	53	7	0	140	63
JA2	7	57	0	2	20	3	1	37	21
JA3	4	80	0	0	12	9	0	30	28
JA4	2	46	0	0	4	2	0	2	11
JA5	7	22	0	0	12	0	0	2	7
JA6	9	37	0	0	18	1	0	8	33
JA7	0	12	0	0	5	5	0	23	52
JA8	11	7	0	0	0	0	0	3	48
JA9	0	31	0	0	5	1	0	2	3
JAØ	0	19	0	0	8	4	0	20	7
JA TOTAL:	42	493	0	2	137	32	1	267	273
OUTSIDE JA	JT-1	HL-1	JT-1	0	HL-1	0	JT-1	0	KH2-5

TOTAL QSO's: **JA1** (447), **JA2** (148), **JA3** (163), **JA4** (67), **JA5** (50), **JA6** (106), **JA7** (97), **JA8** (69), **JA9** (42), **JAØ** (58), **OTHER DX** (10) = **1,257 QSO's**

MONGOLIAN (JT) QSL INFORMATION:
JT1CO: Choigonjav Chadraawal, P.O. Box 905, Ulan Bator 23, Mongolia
JT1KAA: MRSF, P.O. Box 639, Ulan Bator 13, Mongolia
JU1JA: Yoshi Hayashi JA1UT, 4-20-2 Nishi-Gotanda, Shinagawa, Tokyo, Japan
JT1/JA1OEM: Shinichi Toyofuku, Box 9, Sawara, Chiba 287, Japan

BV2DQ / BV2DP TAIWAN NOW QRV ON 6M: Two stations signing BV2DQ and BV2DP are reported to be QRV on 6M. VS6XMQ reported working "DQ" on June 28th on 50.115 MHz. This station is also using the callsign **BV2D.** QSL's for both of these stations is reported to go via: Box 10983, Taipei, Taiwan, R.O.C.

VU2AID INDIA: Dasan has been very active on 6M of late and per JA2DDN he has worked many JA stations on at least two dates in June.
QSL INFO: Dasan Davasakayam, No. 8 Angadi Street, Venkatesapuram Colony, Ayanavaram Madras 600, 023 Tamil Nadu, India

S O U T H A M E R I C A N N E W S

ECUADOR OPERATION PLANNED BY NE8Z / HC1MD: Dr. Rick Dorsch NE8Z/HC1MD sends along the following information on his upcoming Ecuador operation:

"I will be active from various Provinces of Ecuador from **August 2 - August 30, 1991.** This will be a family vacation which will include camping, mountain climbing, wind-surfing, fishing, and visits to ancient Inca Ruins....and naturally, lots of HAM RADIO! I will sign the callsign **HC1MD/HC1-HC7** and **HC1MD/HD1-HD7** for the WPX hunters. I will not be operating from HC8 on this trip. In addition to the HF bands I will be operational on 6M. I will transmit on 50.110 MHz with 9 watts to a 2 element "Galapagos Quad" from different locations."
QSL INFO: Via John C. Kroll K8LJG, 3528 Craig Drive, Flint, Michigan 48506

ZP6CW PARAGUAY: The DX Bulletin which is published by Chod Harris VP2ML reports that **ZP6CW is the new callsign of ZP6XDW (Doug Woolley).** Doug is apparently very active on CW and probably chose his call because of that fact.

A F R I C A N N E W S

7Q7JA QSL INFORMATION: Ted Collins G4UPS reports that 7Q7JA was scheduled to go QRT at the end of June. Towards the end of his operation, Yoshi 7Q7JA requested that QSL's be sent to JL1IHE which is his home call.
QSL INFO: Yoshitaka Kawaku, 2-10 Yamate, Hannou, Saitama 357, Japan

ZAMBIA (9J2) 6M ACTIVITY: Hisao Noda **9J2HN** returned to Zambia on May 20th. His equipment is now an IC551D (with amplifier) and a 6 element yagi. **9J2MK** is now QRV with the IC551 which Hisao used previously.

ZAMBIA (9J2) QSL INFORMATION:
9J2FR: Via I2KRR, Renzo Filippini, Via Donizetti 7, I-22078 Turate, Italy
9J2HN: Via JH8BKL, Katsuhide Kawase, 8 Shinkai, Teshio, Hokkaido, 098-33 Japan

TONGA (A35) OPERATION PLANNED BY JARL KYOTO CLUB: The DX B letin which is published by Chod Harris VP2ML reports that members of the JARL Kyoto Club will operate from Tonga August 10-15, 1991 on 80-6M including the new bands. Some calls and their operators: **A35IL** (JF3PLF), **A35IM** (JI3NTS), **A35IN** (JK3DEV), and **A35IX** (JH3TXR). Four other operators await their A35 calls. The group plans a beacon on 50.130 MHz. QSL all calls via JA3OIN.

ZK1CG SOUTH COOK ISLANDS: Victor ZK1CG has apparently repaired his FT620B with help from N6AMG and others. He was sporadically active during April/May but nothing further has been heard from him after his one stateside opening in April. (Tnx NI6E/KH6)

REPORT FROM ZL1MQ: Cliff Betson ZL1MQ sends along the following report of DX happenings in ZL during May and June:

"May saw a repetition of the same month last year when the band continued with DX the first four days and then went quiet apart from a couple of short openings for the balance of the month, when FO5DR came through, and on the 22nd when ZL1AKW and ZL1ANJ contacted two W7's. Both March and April were about the same regarding the spread of DX. May 1991 was nowhere near as good as the corresponding month in 1981 when the band was open for DX for the first three weeks of the month. The Autumn DX finished up with 33 countries being contacted in ZL. No one worked them all, owing to some openings being localized in a small area. So a few of the totals to hand: ZL1ANJ (27), ZL1MQ (23), ZL3NE (23), ZL3ADT (22), ZL3TY (16), ZL1TZA (13), ZL2ANS (13). This is only a small number of the stations who worked 12+ DX contacts. ZL3TY reports that a JA Contest was operating on April 28-29 when he had 131 contacts. Whether it is a yearly event remains to be seen next year. ZLØAAA came up with 14 countries for May only, but I do not know his total for the season. April 6 saw FK8EB work 9Q5EE in Zaire around noon ZL time. The second time he was contacted, FK8EB was using 10 watts and a mobile whip! If conditions were that good, why silence in ZL re the 9Q5 signal? Although ZL had an average DX season the VK stations had a feast of Europeans in April, with the openings occuring from 0600 to 1300 UTC being the entire range of time that the band could open to Europe during the month. ZL is still Orphan Annie out in the cold re European and African DX. Once somebody finds the path to this tempting DX the band will open up to us. When?

With the Winter Es now in session and most VK's now active in the 50 MHz portion of the band, we expected many openings to VK. Unfortunately, this was not the case. With the few June openings that took place, ZL1-2 were left in the cold whereas the ZL3 call area had the most success. Two unusual events took place during the month of June. For the first time (to my knowledge) a mid-day opening on June 18th resulted in a contact between NI6E/KH6 and ZL3AAU. Although openings have occured in the past at the end of December/beginning of January when the Sun is down at the Tropic of Capricorn, it has never before happened when the Sun has been up at the Tropic of Cancer.

In the past we have had auroral lights and buzz, but during June 5th conditions excelled starting with a report from David ZL4DK. Shortly after 0500 UTC the ZL3MHF beacon had a distinctive auroral buzz. Soon after David contacted ZL3TY, ZL3AAU, ZL2AGI with signals continually gaining in strength. Bob ZL3TY had similar results working ZL4DK, ZL3AAU, ZL2KT, and ZL2AGI. The only other DX during June was VK9YQS who worked ZL2AGI, ZL2KT, and ZL1MQ on the 10th, and ZL3TY and ZL3AAU on the 14th, 16th, and 17th."

REPORT FROM KG6DX: Joe KG6DX (Guam) sends along the following report:
"Six meters is still alive on the equator. On June 9th I came home from two weeks vacation and worked JU1JA in Mongolia for DXCC Country #90 on the band. They were in for a couple of hours and I was able to listen to both sides of the QSO's as they worked into Japan. Later on June 19th I worked JT1KAA. The band has been opening to Okinawa a little before sunset and then stretches out to JT and/or Japan (mainland). I am still getting nighttime TE as well towards the northwest. There isn't much on during the mornings but when I can get on I can usually work into the VK4 area via F-layer."
QSL INFO: Joel Chalmers KG6DX, 93 Gardenia Avenue, Latte Heights, Guam 96913

KH3AE JOHNSTON ATOLL: This new operator, named John, was fairly active during the past season. He gives his address as P.O. Box 764, APO San Francisco 96305. He also stated that the Oahu phone number 422-6905 rings on his desk and he is also connected to a FAX/answering machine. (Tnx NI6E/KH6)

WESTERN SAMOA (5W) 6M ACTIVITY: 5W1KT has gone back to VK6-land, but 5W1IU is still occasionally active on 6M. A new operator 5W1KM has been heard on the band. His name is Kanz and he gives JR3OIB as his manager. (Tnx NI6E/KH6)

FIJI BEACON UPDATE: Steady liaison between Ian 3D2PO and NI6E/KH6 produces the following....the Fiji gang has selected a good, high, AC-powered repeater site for a 6M beacon, and they have secured specific authorization to use the callsign **3D2FJ** for such a beacon. For a frequency, it appears that 50.084 would be a clear one worldwide, especially since 9H1SIX has moved. Fiji is a small enough country that there isn't much point in transmitting a grid locator or anything else besides the callsign. If someone can supply the beacon, the Fijians are ready and willing to install and maintain it. They can easily construct an antenna and supply the feedline, etc. In contrast to the H44 beacon situation (and others), the 3D2's are enthusiastic, communicative, and all-weather friends of 6M. Such a beacon location would not only be useful worldwide as an F2 indicator, and within the South Pacific as an Es indicator, but it also happens to sit squarely in the center of the TEP belt. On at least a half-dozen occasions in the past year, the K6FV beacon has been copied via late-night TEP in Fiji. Ian checks in often on 28.885, or messages for him can be left with NI6E/KH6, N6AMG, K6QXY, or VK4BRG. Ian would like advance notice of shipment so that he can arrange an "import certificate." The fastest shipping address is: **Ian Doncaster, c/o Air Pacific, Nadi Airport, Republic of Fiji**

PAPUA NEW GUINEA BEACON UPDATE: On June 21, P29PL passed to NI6E/KH6 the following update on his P29BPL beacon: Paul has received the new crystal, nominally cut for 50.013, which is 2 MHz lower than the previous frequency. In about a week, he expects to install the crystal, retune the transmitter, and move the beacon to a new location atop a nearby mountain. In May, Paul had installed an experimental 40 foot high phased vertical collinear on the beacon, but it yielded a signal about 2 dB weaker (in Hawaii) than the old quarter-wave vertical. This underscores the difficulty of constructing an effective vertical collinear, and Paul indicates that he will stick with a quarter-wave at the new location.

N E W S F R O M O C E A N I A

NEW ZEALAND BEACON UPDATE: The new ZL3 Greymouth beacon, operated by Bob ZL3TY, has recently been reported testing on 50.106 MHz. Its keying is said to be soft and difficult to read. This is the beacon that has been slated to appear on 50.052.5 MHz. Steve VK3OT has been running his VK3SIX transmitter on 50.053 MHz, so it is hoped that the two of them will coordinate to make sure the two beacons don't end up squarely atop each other. Meanwhile, nothing further has been heard about the New Plymouth beacon that was said to be planned for 50.047.5 MHz. (Tnx NI6E/KH6)

KG6SL/KHØ MARIANA ISLANDS: This new operator, named Bert, appeared on 6M in May utilizing an Icom IC726 and a 5 element Yagi-Uda beam, located in a classroom. He gives his QSL info as: Box 513, Saipan MP 96950.

REPORT FROM NI6E/KH6: Shel Remington NI6E/KH6 sends along the following report:
"Further proof that early 1991 was the best part of Cycle 22 is the fact that long-haul (4000-km-plus) 6M propagation was observed at NI6E/KH6 for no less than 106 consecutive days. This string began on February 7 and was still in progress as of May 23 when I departed for vacation. Compare this with the four previous equinoctial periods: early 1989 = 73 days, late 1989 = 42 days, early 1990 = 72 days, and late 1990 = 51 days. With early 1991 being so hot, it seems likely that late 1991 will be a good season worldwide, so potential DXpedition planners should think BIG for that period. Unfortunately, some DXpeditioners played it safe in early 1991 and that now appears to have been an opportunity missed.

I see that PY5CC is up to 104 countries worked on 6M. The amazing thing is that he didn't even start until late 1989, and thus missed the great early 89 season. Peter hasn't been bragging as I might in his position, and I'd like to see him publicly acclaimed for his accomplishement. Yes, he's in the easy hemisphere (southern) and on the edge of the easy ocean (Atlantic), but still, it's an unparalleled achievement. And Peter is one very nice gentleman, as I'm sure you observed on your Bolivian trip. I don't really have any specific ideas on how he might be recognized, except this: I would hereby like to nominate PY5CC for the 1991 SMIRK Operating Award of Merit. (Since most of the SMIRK Board members read the Bulletin, why not do this through the Bulletin's pages?)

DATE FORMAT STANDARDIZATION:

Currently at least three conflicting formats for recording calendar dates are in use in various quarters. As the 21st Century and Cycle 23 approach, the multiplicity of formats poses a dilemma; how do we interpret an abbreviation such as 01/02/03? Currently, to most U.S. citizens this would stand for January 2, 2003; to soldiers and some Europeans 1 February 2003, and in some scientific and data processing quarters 2001 February 3. We 6M propagation afficionados are as calendar-oriented as Mayan high priests; in the process of transferring input from diverse sources into the global database I often have to think twice about what date formats they are using.

I am pleased to learn that the astronomy community (both amateur and professional) is now moving toward adoption of the recommendation of the International Standards Organization (ISO) and the American National Standards Institute. This system reads the same way that everyone reads numbers: from largest to smallest units. For example, 1991 June 21, and then the time can be attached after the date, so that the whole string follows the logical progression. This format has now been adopted by several astronomical journals and by many nations for computerized information processing. If the whole world would start adopting the scientific system, society would have nearly a decade to get used to it prior to the millenium. I therefore endorse this system, and will use it in all my correspondence and databases, and suggest that all of us in the 6M DX community, including publications editors, do likewise."
QSL INFO: Shel Remington NI6E/KH6, Box 1222, Keaau, Hawaii 96749

L A T E - B R E A K I N G 6 M N E W S

The following 6M news was received just prior to the July 28th publication deadline and could not be included in the main body of the 50 MHz DX Bulletin.

SPANISH (EA) 6M UPDATE: The following news item was received from Ted Collins G4UPS:
"At long last I can report something positive concerning EA!! Following a very lengthy and crucial meeting on 16 July 1991 with the Spanish PTT, Joe EA4CGN telephoned me the following morning to pass along the following information: An announcement will be printed in the official gazette in September detailing the restrictions concerning operations on the 6M band and calling for applications for 6M permits. These facts are known:"

1) Initially only Class A licensees will be allowed to apply for 6M permits.
2) The permits will be for a 1-year duration.
3) Joe has calculated that there could be around 90 to 100 permits issued initially. He predicted that the first permits could be issued by November/December.
4) Frequency spectrum: 50.000 to 50.200 MHz.
5) Power: limited to a maximum of 30 watts ERP.
6) Modes: CW and SSB only will be allowed.
7) Operations on the 6M band will be on a secondary/non-interference basis.
8) No beacons will be allowed (but Joe predicted that the EA3VHF beacon which is unofficial will continue to run!!).
9) No antenna restrictions have been mentioned.

9H1SIX BEACON UPDATE: Ted Collins G4UPS reports that the 9H1SIX beacon is now running on 50.024.5 MHz with 10 watts output to a ground plane antenna. The 5 element yagi is still in place, but the ground plane is being used at present.

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SIX SCATTER - A FEW WORDS FROM THE PUBLISHER: Unfortunately, this is my last issue of the Bulletin. Please give the new publisher/editor (Shel NI6E/KH6) the continued support you've given me over the past one and a half years. It's been a tremendous pleasure serving all of you during this time and I know that Shel will continue in the same vein. It is my hope that the Bulletin will continue to grow and gain support worldwide, especially since the lull between Cycles 22 and 23 isn't far off. During these "off years", information exchange and beacon coordination projects are as important as ever. It will be in our best interest to be "ready" for the onset of Cycle 23, instead of waiting until the last minute to get various projects rolling along. God Bless & 73!